NUTRITIONAL STATUS OF CHILDREN AND PREVALENCE OF ANAEMIA AMONG CHILDREN, ADOLESCENT GIRLS AND PREGNANT WOMEN

District Level Household Survey
on
Reproductive and Child Health

INDIA
2002-2004

स्वर्ण जयंती वर्ष

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GOLDEN JUBILEE YEAR
1956 - 2006

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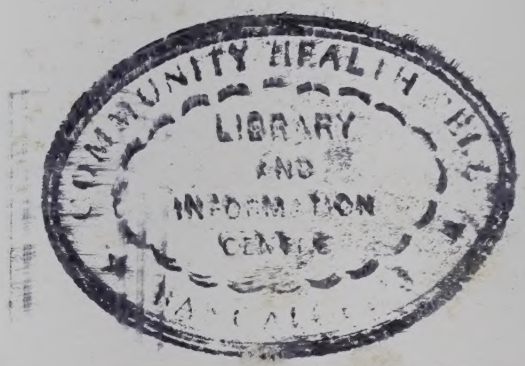

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Preface and Acknowledgement

In India, the family planning programme has been gradually reoriented towards the holistic approach of the Reproductive and Child Health (RCH) since the International Conference on Population and Development (ICPD) at Cairo in 1994. The Government of India began the implementation of a target-free approach throughout the country in 1996. The essence of this approach, which was subsequently renamed as community needs assessment approach (CNAA), was to modify the system of monitoring the programme and make it a demand-driven system in which a worker would assess the need of the community at the beginning of each year in order to provide the services. The National Population Policy 2000 affirms the commitment of Government of India to the philosophy of decentralized planning through *Panchayati Raj* Institutions, and provides a policy framework for prioritising strategies to meet the RCH needs of the people and achieve replacement level fertility by 2010 A.D.

To meet these objectives, it became necessary to generate district level data (as district is the basic nucleus of administration) other than service statistics, on utilization of the services provided by the government health facilities as well as by the private health facilities that would be helpful in monitoring the progress. The programme imperatives also called for the assessment of people's perceptions about quality of services. In order to achieve this goal, Government of India decided to undertake District Level Household Survey in all the districts in the country, so that the progress of Reproductive and Child Health (RCH) can be monitored. The first round of the RCH survey (RHS-RCH) in India was conducted during the year 1998–99 for which International Institute for Population Sciences (IIPS), Mumbai was designated as the nodal agency.

In Round II, the survey was conducted during 2002-04 in 593 districts as per the 2001 Census. In addition to the information that was collected in Round I, in Round II some new dimensions were added, such as, testing of cooking salt to assess the consumption of salt fortified with iodine, testing of blood of children (ages below 72 months), adolescents and pregnant women to assess the level of anaemia and measuring weight of children to assess the nutritional status. The survey was conducted by various Regional Agencies (RAs) and co-ordinated by the International Institute for Population Sciences (IIPS), Mumbai.

The district level household survey covered a representative sample of about 1,000 households in each district, and all the married women age 15-44 in the sample household were interviewed. This is for the first time that such a large sample survey included men as respondents to elicit information on RTI, STI, HIV/AIDS, and views on family planning.

The present report on nutrition is based on 548 districts because, for various reasons, testing of blood of children, adolescents and pregnant women could not be carried out in 38 districts in the northeast and 7 districts in Jammu and Kashmir during the course of DLHS-RCH in 2002-04. For children under 72 months in the sample households, nutritional status has been analysed and reported in terms of weight-for-age along with the assessment of level of anaemia. At the state level, differentials in nutritional status of children, adolescent girls and pregnant women by selected background characteristics are also presented.

The second round of the Reproductive and Child Health Survey (2002-04) was successfully completed due to the efforts and involvement of numerous organizations, regional agencies and individuals at different stages of the survey. Although it is not possible to acknowledge everyone involved in the survey, several organizations and individuals deserve special mention.

We are immensely indebted to the Union Ministry of Health and Family Welfare (MoHFW) for giving us the opportunity to work as the nodal agency for a project of such national importance. In particular, we would like to thank, Shri Naresh Dayal, Secretary, Ministry of Health and Family Welfare (MoHFW), Government of India, Shri P.K. Hota, Shri Y. N. Chaturvedi and Shri A. R. Nanda, the former Secretaries, Department of Family Welfare, for their timely initiative, advice and valuable support extended to the project. Our special thanks are due to Shri S.K. Sinha, Additional Director General, Ministry of Health and Family Welfare, GoI. Thanks are due to Shri K. V. Rao, Shri S. K. Das and Shri D. K. Joshi, the former Chief Directors for their help. We are also thankful to Shri Partha Chattopadhyaya, Chief Director and Shri K. D. Maiti, Director, Mrs. Rashmi Verma, and Mr. Rezimohn, Assistant Director, Statistics Division of MoHFW for all the support extended by them. Our thanks are also due to the Directors of Census Operations and the Department of Health and Family Welfare in all the states and union territories. It also gives us immense pleasure to thank to Dr. G. N. V. Ramana, Public Health Specialist, World Bank, New Delhi. We express our gratitude to UNICEF, New Delhi for providing fund for the nutrition component in DLHS-2 and also thanks Dr Chandra Sekhar, Dr. V. Jayachandran, and Mr. R. G. Mitra, of the same organisation for their able guidance and technical support to the project. We would also like to thank the officials of NSSO for their help in providing UFS Block for DLHS-2.

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We would be failing in our duty if we do not thank our respondents who gave their consent and time to collect blood sample and to measure weight with tremendous patience and understanding.

We hope and believe that the data generated through the survey will meet the requirements of the programme administrators and policy makers in monitoring and formulating effective interventions for providing quality services and achieving multiple objectives.

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CHAPTER I

DISTRICT LEVEL HOUSEHOLD SURVEY UNDER DLHS-RCH

1.1 Background and Objectives of the Survey

The Reproductive and Child Health (RCH) programme that has been launched by the Government of India (GoI) in 1996-97 is expected to provide quality services and achieve multiple objectives. It ushered a positive paradigm shift from the method-oriented, target-based approach to providing client-centred, demand-driven quality services. Also, efforts are being made to reorient provider's attitude and to strengthen the services at outreach levels.

The new approach requires decentralization of planning, monitoring and evaluation of the services. The district being the basic nucleus of planning and implementation of the RCH programme, Government of India has been interested in generating district level data on utilization of the services provided by government health facilities, other then that based on service statistics. It is also of interest to assess people's perceptions on quality of services. Therefore, it was decided to undertake the District Level Household Survey (DLHS) under the RCH programme in the country.

- The Round I of the RCH survey was conducted during the year 1998–99 in two phases (each phase covered half of the districts from all states/union territories) in 504 districts, for which the International Institute for Population Sciences (IIPS), Mumbai was designated as the nodal agency.

In Round II, survey was completed during 2002-04 in 593 districts as per the 2001 Census. In DLHS-RCH, information about RCH has been collected using a slightly modified questionnaire. In Round II, some new dimensions, such as test of cooking salt to assess the consumption of salt fortified with iodine, collection of blood of children, adolescents and pregnant women to assess the level of anaemia, and measurement of weight of children to assess the nutritional status, were incorporated. The main objectives of this report are:

I. To examine the nutritional status of children in India, states and districts
II. To assess the prevalence of Anaemia among children, adolescent girls and pregnant women.

Besides there, the following aspects were also covered under the DLHS-RCH

- Coverage of ANC & immunization services
- Proportion of safe deliveries
- Contraceptive prevalence rates
- Unmet need for family planning
- Awareness about RTI/ STI and HIV/AIDS
- Utilization of government health services and users' satisfaction.

Separate reports for all India, each state and district have been prepared that cover these aspects of the RCH programme.

1.2 Survey Design

For the purpose of conducting the DLHS-RCH, all the states and the union territories were grouped into 16 regions. A total of twelve research organizations including Population Research Centres (PRCs) were involved in conducting the survey in 16 regions with IIPS as the nodal agency.

In Round II, a systematic, multi-stage stratified sampling design was adopted. In each district, 40 Primary Sampling Units (PSUs – Villages/Urban Frame Size) were selected with probability proportional to size (PPS) using the 1991 Census data. All the villages were stratified according to population size, and female literacy was used for implicit arrangement within each strata. The number of PSUs in rural and urban areas was decided on the basis of percent of urban population in the district. However, a minimum of 12 urban PSUs was selected in each district in case the percent urban was low. The target sample size in each district was set at 1,000 complete residential households from 40 selected PSUs. In the second stage, within each PSU, 28 residential households were selected with Circular Systematic Random Sampling (CSRS) procedure after house listing. In order to take care of non-response due to various reasons, sample was inflated by 10 percent (i.e. 1,100 households).

For selecting the urban sample, the National Sample Survey Organization (NSSO) provided the list of selected urban frame size (UFS) blocks in the district. The UFS blocks were made available separately for each district for urban areas. The maps of selected blocks were obtained from the NSSO field office located in each state/union-territory.

But in each state, in two districts, the PSUs that were surveyed in Round I of the DLHS-RCH (also known as RHS-RCH) were also selected for survey in Round II. This was done in order to measure the changes more accurately. Two districts, one with the highest proportion of safe delivery and another with the lowest proportion of safe delivery among those surveyed during Round I of the survey were selected for this purpose. In all other districts, fresh sample of PSUs were selected.

1.3 House Listing and Sample Selection

The household listing operation was carried out in each of the selected PSU segment prior to the data collection that provided the necessary frame for selecting the households. The household listing operation also involved preparation of location map and layout sketch map of the structures and recording the details of the households in these structures in each selected PSU. This exercise was carried out by independent teams each comprising one lister, one mapper and one supervisor under the overall guidance and monitoring of the survey coordinator of households of the selected regional agencies.

A complete listing of households was carried out in villages with households up to 300. In case of villages with more than 300 households but less than or equal to 600 households, two segments of more or less same size were formed and one segment was selected at random and household listing was carried out. In case of villages with more than 600 households, segments each of about 150 households were formed and two segments were selected for listing using the systematic random sampling method.

Small villages with less than 50 households were linked with a nearest village. After combining it with the nearest village, the same sampling procedure was adopted as mentioned above.

For the urban PSUs, the selected UFS blocks needed no segmentation as they were of almost equal size and contained less than 300 households. No replacement was made if selected household was absent during data collection. However, if a PSU was inaccessible, a replacement PSU with similar characteristics was selected by the IIPS and provided to the regional agency for survey.

1.4 Questionnaire

The DLHS-RCH collected information on various indicators that would assist policy makers and programme managers to formulate and implement the goals set for the RCH programme. There were five modules of schedules: Households Questionnaire, Woman's Questionnaire, Husband's Questionnaire, Village Questionnaire and Health Questionnaire. They were finalized after in consultation with Ministry of Health and Family Welfare, World Bank, and a Technical Advisory Committee.

Household Questionnaire: The household questionnaire lists all usual residents in each sample household including visitors who stayed in the household the night before the interview. For each listed household member, the survey collected basic information on age, sex and marital status, relationship to the head of the household, education and the prevalence /incidence of tuberculosis, blindness and malaria. Information was also collected on the main source of drinking water, type of toilet facility, source of lighting, type of cooking fuel, religion and caste of household head and ownership of other durable goods in the household. In addition, a test was conducted to assess whether the household used cooking salt that has been fortified with iodine. Besides, details of marriages and deaths that occurred to usual residents within reference period were collected. Efforts were also made to get information about maternal deaths.

Women Questionnaire: Women questionnaire is designed to collect information from currently married women age 15-44 years who are usual residents of the sample household or visitors who stayed in the sample household the night before the interview. The women questionnaire covered the following sections:

Section I: Background Characteristics: In this section the information collected on age, educational status and birth and death history of biological children including still birth, induced and spontaneous abortions.

Section II: Antenatal, Natal and Post natal Care: In this section the questionnaire collect information only from the women who had live birth, still birth, spontaneous or induced abortion during last three years preceding the survey date. The information on whether women received antenatal and postpartum care, who attended the delivery and the nature of complications during pregnancy for recent births were also collected.

Section III: Immunization and Childcare: This section gives information about feeding practices, the length of breastfeeding, immunization coverage and recent occurrence of diarrhoea, and pneumonia for young children (below age 3 years).

Section IV: Contraception: This section provides information on knowledge and use of specific family planning methods. Questions were included about reasons for non- use, intentions about future use, desire for additional child, sex preference for next child etc.

Section V: Assessment of Quality of Government Health Services and Client Satisfaction. In this section the questions are targeted to assess the quality of family planning and health services provided by government health facilities. The information were also collected about the rating of government health facilities and staffs and reasons for not visiting to government health facilities by eligible woman.

Section VI: Awareness about RTI/STI and HIV/AIDS: women's knowledge of RTI/STI, on general awareness, source of knowledge, awareness of mode of transmission, curability, symptoms and treatment seeking behaviour were collected. About HIV/AIDS, general awareness, source of knowledge, awareness of mode of transmission and prevention, etc. were canvassed.

Husband Questionnaire: In the DLHS-RCH, husband questionnaire was used to collect information from eligible woman's husband about age, educational status, knowledge and source of knowledge of RTI/STI and HIV/AIDS, reported symptoms of RTI/STI and male participation. Apart from these data, desire for children, reasons for not using family planning methods, future intention to use these methods and knowledge about no scalpel vasectomy (NSV) have also been collected.

Health Questionnaire: For the first time in the RCH survey, a health questionnaire was included in the second round of DLHS-RCH. The information collected were on weight of children age 0-71 months old and the blood sample to assess the haemoglobin levels of children age 0-71 months old, adolescents 10-19 years old and pregnant eligible women. These data are useful for assessing the levels of nutrition prevailing in the population and prevalence of anaemia among women, adolescent girls and children (see Appendix- K).

Village Questionnaire: A village questionnaire is also added in this round of the RCH survey. The information collected on the availability and accessibility of various facilities in the village, especially on accessibility of educational and health facilities.

The house-listing teams and the interviewers and the supervisors for the main survey were given rigorous training based on the manuals developed for the purpose by the IIPS. All the questionnaires were bilingual, with questions in both the regional and English language.

1.5 Field Work and Sample Coverage

The fieldwork for RCH Round II was done in two phases. During Phase I, 296 districts were covered from March 2002 to December 2002, except in some districts of Bihar and Jharkhand where the fieldwork got extended to 2003. In Phase II, 297 districts were covered during January 2004 to October 2004, except in some districts of Bihar and Jharkhand where the fieldwork continued until early 2005. Overall, during Round II, a total of 620 thousand households were covered. From these surveyed households, 507 thousand currently married women (aged 15-44 years) and 330 thousand husbands of eligible women were interviewed.

1.6 Data Processing

All the five types of completed questionnaires were brought to the headquarter of regional agencies and data were processed using microcomputers. The process consisted of office editing of questionnaires, data entry, data cleaning and tabulation. Data cleaning included validation, range and consistency checks. For both data entry and tabulation of the data, IIPS developed the software package. The district and state level reports were prepared by regional agencies, whereas national report is prepared by the nodal agency.

CHAPTER II

INTRODUCTION AND METHODOLOGY

2.1 Introduction

An important component of the District Level Household Survey (DLHS) under the RCH Project is to collect information on nutritional status of children under 6 years (0-71 months), adolescent girls in 10-19 years of age and pregnant women in 15-44 years of age from nationally representative sampled households.

For children under 6 years, one of the most commonly used anthropometric indices for assessing nutritional status is the weight-for-age. This index reflects body mass relative to chronological age. It is considered to be a composite index of two other anthropometric measures (height-for- age & weight-for-height) influenced by both the height of the child (height-for-age) and his or her weight (weight-for height). Weight-for-age basically captures the chronic and acute malnutrition among children as a result of frequent and early exposure to adverse conditions such as, illness and inadequate nutrition. As such, weight-for-age is a preferable measure of nutritional status of children. In the DLHS-RCH, weight for children under 6 years in sampled representative households were taken using a solar-powered digital scale with an accuracy of ± 100 grams. Weights for children under 24 months were taken keeping children in the lying down position on the weighing scale while for older children weights were taken in standing position.

Prevalence of anaemia among children, adolescent girls and pregnant women is a major concern. The presence of low level of haemoglobin is the characteristic of anaemic persons. Haemoglobin is a medium for transporting oxygen from the lungs to other vital organs of the body. Low level of haemoglobin results in impaired cognitive performance, loco-motor function and, IQ development among children, while among pregnant women it results in premature delivery, low birth weight, prenatal mortality and maternal mortality. Anaemia retards physiological growth in adolescent girls. Thus assessment of prevalence of anaemia among children, adolescent girls and pregnant women is vital to strengthen the Reproductive and Child Health programme. Keeping this in view, the DLHS-RCH survey undertook direct measurement of haemoglobin levels of children under 6 years (0-71 months), adolescent girls of 10-19 years and pregnant women 15-44 years in a nationally representative sample of households selected from across 593 districts in India.

2.2 Methodology

I Estimation of Nutritional Status of Children

The classification of a child as undernourished is based on comparison of its weight for age with a "reference" child of the same age and sex. In this report, the National Centre

for Health Statistics (NCHS) growth reference, referred to as NCHS/WHO international reference population has been adopted for the purpose of assessment of nutritional status of children in terms of weight for age. The use of NCHS base makes the results internationally comparable.

To assess nutritional status of children with respect to the reference population, Z–scores (standard deviation scores) are employed. Z score is defined as

Z–score = (observed weight of the child – median weight of the reference population) / (standard deviation of weights in the reference population)

The Z–score scale measured in standard deviation (SD) units, is linear and therefore a fixed interval of Z–scores has a fixed weight difference in kg. for all children of the same age and sex. Z – scores are also sex-independent, thus permitting the evaluation of children's growth status by combining sex and age groups. A child is classified as severely malnourished if its Z score is less than -3 SD and malnourished if the Z score is below −2 SD.

II Estimation of Anaemia

Haemoglobin level is best measured by directly adding 20 µl of blood into Drabkin's solution. As this was not possible in the field survey, dried-blood-spot method was used.

Equipment used in the field:

1. Haemoglobin pipette
2. Whatman No. 1 fitter paper 1.5 X 1.5 cm
3. Disposable lancet

A measured amount of 20 µl of blood was accurately pipetted on to 1.5 X 1.5 cm Whatman No. 1 filter paper and blood spot was air-dried. The identification number was marked on the filter paper with a lead pencil and kept in a polythene bag. The filter papers were dispatched through courier to the laboratory within ten days. In the laboratory Hb estimation was done using cyanmeth haemoglobin method within 15 days after collection of the blood sample.

III Procedure for Collection of Blood

The health investigators involved in taking the blood samples were given the following instructions:

A. ***Selection of skin puncture site***

In children, adolescents and adults skin puncture is conveniently made on the center of the palmer surface of the terminal segment of index, middle or ring finger. Puncturing the tip too close to the nail or the side of the finger is to be avoided. In children less than 4

months of age, heel puncture is preferred. The selected site must be warm and free of oedema and infections.

B. *Preparation of site and method of puncture*

i. Explain the procedure to the person/care giver and reassure them that it is simple.
ii. Clean the selected site with ether swab and allow it to dry completely. Spiri or alcohol swabs should not be used.
iii. Hold the finger firmly and apply gentle pressure just proximal to the puncture site.
iv. Puncture the skin with a sharp lancet held at right angles to the direction of skin creases. This allows the blood drop to form and prevents it from running into the skin creases.
v. Wipe the first drop away.

C. *Collection of blood sample*

i. Quickly place the tip of the haemoglobin pipette over the puncture and fill up to 20 µl level or slightly more.
ii. Once collection is done, apply sufficient pressure with a dry swab to stop bleeding
iii. Wipe the outside of the pipette with dry swab. If the level of the blood is higher than the 20 µl mark, bring it to the exact 20 µl mark by absorbing the extra blood on the dry swab.
iv. Deliver the blood from the haemoglobin pipette on to the whatman No. 1 filter paper. Air-dry the blood spot.
v. Mark the filter paper with the identification number using a lead pencil; keep filter papers with dried blood spot in a polythene bag, which also bears the identification number

D. *Hb Estimation*

i. Drop the filter paper containing dried blood spot into 5 ml Drabkin's solution and allow it to stand for an hour; check if the dried blood has completely eluted. If blood spot is not fully eluted, do not estimate haemoglobin.
ii. Vortex it for one minute and measure the optical density of the solution at 540 nm using Drabkin's solutions blank and a commercial standard.
iii. Calculate the Hb in g/dl by using the formula:

$$\text{Hb in g/dl} = \frac{\text{OD of sample} \times \text{concentration of Hb standard}}{\text{OD of standard} \times 100} \times \text{Dilution factor (251)}$$

where concentration of Hb standard is 60mg/dl, and OD stands for optical density.

The cut-off levels of haemoglobin used for classification of children (0-71 months), adolescent girls (10-19 years) and pregnant women (15-44 years) as mild, moderate and severe anaemia are those recommended by the UNICEF. These are shown in Table 2.1.

Table 2.1: CUT-OFF HAEMOGLOBIN LEVELS FOR ANAEMIA CLASSIFICATION

Anaemia Level	Haemoglobin level for		
	Children	Adolescent girls	Pregnant women
Mild	8.0-10.9 g/dl	10.0-11.9 g/dl	8.0-10.9 g/dl
Moderate	5.0-7.9 g/dl	8.0-9.9 g/dl	5.0-7.9 g/dl
Severe	Below 5.0 g/dl	Below 8.0 g/dl	Below 5.0 g/dl

However, these cut off levels are different from those used in the National Family Health Survey (NFHS). For the purpose of comparison, the results using the NFHS cut off points are shown in Appendices – F, G, H & I.

2.3 Sample Weight

To provide valid estimates of weight for age of children and anaemia status of children, adolescent girls and pregnant women from DLHS-RCH survey district, state and national levels sample weights are applied at each levels of estimation. Four sets of weights corresponding to weight-for-age of children, haemoglobin levels of children, adolescent girls and pregnant women are worked out.

For example, the sample weight for the computation of weight-for-age is a type of proportionate scaling to make the estimate representative at district, state and national levels. The first step is to compute proportion of children under 6 years in the i^{th} district with in a particular state from the 2001 Census as

$$p_i^c = \frac{N_i^c\,(children\ under\ 6 years\ in\ 2001 Census)}{\sum_i N_i^c\,(children under\ 6 years\ in\ 2001 Census)}$$

Similarly, the sample proportion of children whose weight have been taken in the DLHS-RCH survey is computed as

$$p_i^s = \frac{N_i^s\,(children\ under\ 6\ years\ \ whose\ weight\ have\ been\ taken\ in\ DLHS-RCH)}{\sum_i N_i^s\,(children under\ 6 years\ enumerated\ \ in DLHS-RCH)}$$

The sample weight used in the estimation of weight-for-age of children for the ith district in a particular state is

$$w_i = \frac{p_i^c}{p_i^s}$$

This is further normalized with respect to the effective number of children covered in the survey. The normalised weight for the ith district used in the estimation of weight for age of children is calculated as

$$w_i^c = \frac{\left(\sum_i N_i^s\right)}{\left(\sum_i N_i^s \times w_i\right)} \times w_i$$

The state and national level sample weights are computed in the similar manner. Following the same procedure, sample weights for estimation of haemoglobin levels for children, adolescent girls and pregnant women at district, state and national levels are also computed using the corresponding data from the 2001 Census and DLHS-RCH.

2.4 Training of Health Investigators and Testing Centres

Health investigators were assigned the responsibility of blood sample collection in the DLHS-RCH. In every survey team of three investigators, field editor and one supervisor, there was one health investigator (HI). The essential qualification of HI was education up to 10+2 level and training either as an ANM or laboratory technician. However a few exceptions were made in districts/states where sufficient candidates with the aforesaid qualification were not available. HIs were trained for two days at various national and state level institutions followed by one day of hands-on practice in the field.

The blood samples collected from the field in DLHS-RCH were sent within ten days for testing the haemoglobin level. Table 2.2 provides information on state-wise training centres, blood testing centres and the number of HIs trained specifically for DLHS-RCH. National Institute of Research in Reproductive Health, Mumbai, also served as a testing centre in Phase I of DLHS-RCH.

2.5 Response Rate and Effective Sample Size

Although the household survey covered in Round II of DLHS-RCH covered 593 districts in two phases, data on weight of children and anaemia could not be collected in Jammu and Kashmir in 7 districts due to some unavoidable reasons. Similarly in the north-eastern region, data on weight of children could not be collected in 38 districts and on anaemia in 39 districts in Phase-II of the survey. Although later on, these data were separately collected by MODE, as the data format was quite different from that of DLHS-RCH, they have not been included in the analysis presented in this report. Thus in effect, data on nutritional status are available for 548 districts. On anaemia, owing to invalid blood samples in a few districts, data have been presented in this report for 542 districts only.

Table 2.2 State-wise number of health investigators, training place and blood testing centres in DLHS-RCH (2002-04)

State	No of health investigators trained	Training place	Blood testing centre
Chattisgarh Uttar Pradesh	21	National Institute of Health and Family Welfare (NIHFW), New Delhi	National Institute of Health and Family Welfare (NIHFW), New Delhi
Maharashtra	13	Nagpur Unit, National Institute of Nutrition (NIN), Hyderabad	National Institute of Nutrition (NIN), Hyderabad
Gujarat	14	NIHFW, New Delhi	NIHFW, New Delhi
Madhya Pradesh	19	NIHFW, New Delhi	NIHFW, New Delhi
Bihar Jharkhand	25	NIHFW, New Delhi	NIN, Hyderabad
Delhi	4	NIHFW, New Delhi	NIHFW, New Delhi
Himachal Pradesh	6	NIHFW, New Delhi	NIHFW, New Delhi
Jammu & Kashmir	14	Srinagar	NIHFW, New Delhi
Haryana Punjab	12	NIHFW, New Delhi	NIHFW, New Delhi
Karnataka Goa	6	NIN, Hyderabad	NIN, Hyderabad
Kerala	10	NIN, Hyderabad	NIN, Hyderabad
Assam	8	Regional Medical Research Centre (ICMR) Bhubaneswar, Orissa	NIHFW, New Delhi
Meghlaya	2	ICMR Bhubaneswar, Orissa	NIHFW, New Delhi
Nagaland	3	ICMR Bhubaneswar, Orissa	NIHFW, New Delhi
Arunachal Pradesh Mizoram Manipur Sikkim Tripura	20	NIHFW, New Delhi	NIHFW, New Delhi
Orissa	15	NIN Nagpur & Kolkata	NIN, Hyderabad
West Bengal	11	Kolkata	NIN, Hyderabad

In districts where these data were collected, considerable effort was made to convince respondents to cooperate in measuring nutritional status of children in terms of weight for-age and prevalence of anaemia among children, adolescent girls and pregnant women. However, as voluntary consent was required in collection of blood sample for estimation of haemoglobin, sizeable non-response was inevitable. As such, attempt to generalize the survey results should be made with some caution. Tables 2.3 through 2.6 show response rates for children, adolescent girls and pregnant women, respectively.

The response rate for weight measurement of children varies from 34 percent in Nagaland to 91 percent in Tripura (see Table 2.3). Overall, the weight was measured for 68 percent of children of age less than six years in the all-India sample. The non-response for weight measurement was mainly because of refusals in the case of young children and for the fact that they had gone to school, or for playing in the neighbourhood, in the case of older children. In addition, for a small percentage of children (2 percent) the measured weight-for-age was found to be invalid. However, such cases were particularly large in Nagaland (8 percent) and Uttaranchal (6 percent). Thus one should interpret the data on weight of children for these two states with some caution.

At the all-India level, the response rate for haemoglobin assessment is 56 percent for children (Table 2.4), 52 percent for adolescent girls (Table 2.5), and 58 percent for pregnant women (Table 2.6). In addition, in each group, for about 10 percent of cases the haemoglobin level could not be measured either because of faulty field procedure in blood collection or storage, or from the delay in taking the samples to testing laboratories. The non-response for haemoglobin assessment was either due to refusals or non-availability of the respondents during the two days of field visit to the PSU. The response rates were particularly low in the north-eastern states and in the union territories of Chandigarh and Lakshadweep. Despite such huge non-response rates, the effective samples covered for both weight and haemoglobin measurements are quite large in most states, and also, as shown in Chapter 3, the cases of non-responses were fairly evenly distributed among the various socio-economic classes. Therefore, the data collected are worthy of serious consideration.

Table 2.3 RESPONSE RATE FOR WEIGHT MEASUREMENT OF CHILDREN

Response rate of children (age 0-71 months) for weight measurement by state / union territory, India, 2002-04

State / Union territory	Response rate (percent)	Percent invalid	Number of eligible children	Number of children covered	
				Weighted	Unweighted
Andhra Pradesh	50.3	1.8	13,489	6,636	6,668
Bihar	63.6	1.9	40,894	25,506	25,539
Chattisgarh	71.2	3.8	11,121	7,479	7,616
Delhi	68.5	3.8	4,824	3,203	3,180
Goa	74.0	1.5	889	646	648
Gujarat	69.8	0.7	17,959	12,437	12,445
Haryana	77.6	0.4	14,997	11,587	11,591
Himachal Pradesh	67.3	1.1	5,894	3,917	3,926
Jharkhand	64.1	1.7	16,501	10,379	10,388
Karnataka	60.1	1.4	15,527	9,199	9,203
Kerala	64.7	2.1	6,654	4,226	4,216
Madhya Pradesh	73.1	2.8	38,265	27,100	27,162
Maharashtra	69.7	1.0	23,399	16,139	16,152
Orissa	69.0	0.3	21,816	14,999	15,000
Punjab	74.6	0.9	10,696	7,899	7,902
Rajasthan	66.9	1.9	30,888	20,374	20,288
Tamil Nadu	86.3	1.5	16,364	13,881	13,902
Uttar Pradesh	64.8	2.3	79,980	50,794	50,636
Uttranchal	55.4	5.6	9,632	5,043	5,035
West Bengal	72.9	0.7	12,330	8,937	8,932
Other states[1]					
Jammu & Kashmir	52.0	1.2	3,815	1,956	1,959
Arunachal Pradesh	76.4	0.5	6,147	4,668	4,674
Assam	78.5	0.9	6,130	4,765	4,771
Manipur	63.9	0.6	4,816	3,059	3,059
Meghalaya	77.2	0.8	3,482	2,668	2,667
Mizoram	42.5	0.2	2,652	1,126	1,126
Nagaland	33.6	8.2	2,384	763	735
Sikkim	83.1	0.2	1,565	1,300	1,298
Tripura	90.7	0.0	594	539	539
Union territories					
A & N Islands	66.3	0.3	1,402	928	927
Chandigarh	35.3	1.5	561	195	195
Daman & Diu	65.7	0.5	1,343	875	879
Dadra & Nagar Haveli	76.5	0.3	831	634	634
Lakshadweep	71.1	0.5	870	616	616
Pondicherry	85.1	0.9	2,195	1,846	1,851
India	67.6	1.8	4,30,906	2,86,414	2,86,359

Note:[1] Data collected for half of the districts only.

Table 2.4 RESPONSE RATE FOR A HAEMOGLOBIN ASSESSMENT OF CHILDREN

Response rate of children (age 0-71 months) for haemoglobin assessment by state / union territory, India, 2002-04

State / Union territory	Response rate (percent)	Percent invalid	Number of eligible children	Number of children covered	
				Weighted	Unweighted
Andhra Pradesh	51.0	11.3	13,489	6,021	6,108
Bihar	47.2	13.2	40,894	15,797	16,731
Chattisgarh	64.6	3.3	11,121	6,931	6,947
Delhi	63.9	8.9	4,824	2,753	2,809
Goa	47.7	19.6	889	326	341
Gujarat	57.6	4.1	17,959	9,931	9,917
Haryana	76.5	2.1	14,997	11,227	11,230
Himachal Pradesh	52.8	3.2	5,894	2,984	3,015
Jharkhand	49.2	0.2	16,501	8,101	8,098
Karnataka	38.0	9.2	15,527	5,288	5,353
Kerala	25.9	4.6	6,654	1,658	1,641
Madhya Pradesh	64.5	29.7	38,265	17,747	17,363
Maharashtra	62.1	11.7	23,399	13,196	12,842
Orissa	61.9	19.3	21,816	11,005	10,891
Punjab	71.8	7.3	10,696	6,719	7,120
Rajasthan	62.6	5.1	30,888	18,453	18,346
Tamil Nadu	72.3	9.1	16,364	10,639	10,753
Uttar Pradesh	54.2	6.0	79,980	40,848	40,762
Uttranchal	49.5	2.5	9,632	4,682	4,652
West Bengal	61.5	6.1	12,330	6,844	7,119
Other states[1]					
Jammu & Kashmir	47.7	0.1	3,815	1,817	1,817
Arunachal Pradesh	47.4	19.0	6,147	2,334	2,361
Assam	43.8	34.2	6,130	1,849	1,768
Manipur	43.3	0.3	4,816	2,076	2,076
Meghalaya	5.7	52.3	3,482	68	95
Mizoram	25.0	0.9	2,652	656	656
Nagaland	22.1	47.7	2,384	243	275
Sikkim	45.2	0.8	1,565	698	702
Tripura	61.1	0.6	594	361	361
Union territories					
A & N Islands	63.6	2.2	1,402	870	871
Chandigarh	26.7	0.7	561	149	149
Daman & Diu	47.6	9.7	1,343	618	577
Dadra & Nagar Haveli	69.9	14.5	831	497	497
Lakshadweep	16.1	0.7	870	139	139
Pondicherry	74.6	2.1	2,195	1,619	1,602
India	55.9	10.3	4,30,906	2,16,820	2,15,984

Note:[1] Data collected for half of the districts only.

Table 2.5 RESPONSE RATE FOR HAEMOGLOBIN ASSESSMENT OF ADOLESCENT GIRLS

Response rate of adolescent girls (age 10-19 years) for haemoglobin assessment by state / union territory, India 2002-04

State / Union territory	Response rate (percent)	Percent invalid	Number of eligible adolescent	Number of adolescents covered	
				Weighted	Unweighted
Andhra Pradesh	45.2	10.5	11,856	4,713	4,790
Bihar	39.8	8.0	28,751	9,594	10,514
Chattisgarh	57.1	2.7	9,604	5,311	5,331
Delhi	45.4	7.9	5,119	2,123	2,142
Goa	43.4	18.0	843	309	300
Gujarat	59.5	3.0	13,518	7,820	7,805
Haryana	71.4	2.1	12,514	8,731	8,741
Himachal Pradesh	36.4	4.6	6,805	2,343	2,365
Jharkhand	43.4	0.2	12,710	5,500	5,499
Karnataka	40.6	8.1	16,949	6,150	6,325
Kerala	25.2	6.7	6,083	1,445	1,431
Madhya Pradesh	57.1	24.6	28,279	11,978	12,164
Maharashtra	60.2	11.0	20,530	11,193	11,002
Orissa	59.7	18.1	17,779	8,582	8,698
Punjab	71.1	6.5	9,913	6,310	6,587
Rajasthan	58.8	6.2	23,002	12,663	12,688
Tamil Nadu	71.9	8.2	12,647	8,325	8,339
Uttar Pradesh	53.7	5.5	53,037	26,811	26,932
Uttranchal	63.8	2.2	8,154	5,104	5,092
West Bengal	57.6	6.9	10,241	5,185	5,488
Other states[1]					
Jammu & Kashmir	53.1	0.2	6,377	3,375	3,378
Arunachal Pradesh	25.1	21.1	4,710	931	933
Assam	37.8	35.1	7,434	1,883	1,825
Manipur	33.2	1.2	3,356	1,101	1,102
Meghalaya	11.1	33.2	2,629	198	195
Mizoram	24.4	0.7	2,255	546	547
Nagaland	36.4	27.8	2,617	683	688
Sikkim	35.2	0.2	1,254	439	440
Tripura	57.2	0.0	697	399	399
Union territories					
A & N Islands	48.8	1.7	1,074	511	515
Chandigarh	28.3	3.4	513	140	140
Daman & Diu	49.9	7.5	1,128	548	521
Dadra & Nagar Haveli	55.6	9.6	489	246	246
Lakshadweep	42.0	0.9	791	329	329
Pondicherry	73.6	3.6	1,943	1,409	1,379
India	52.4	9.0	3,45,601	1,65,152	1,64,870

Note:[1] Data collected for half of the districts only.

Table 2.6 RESPONSE RATE FOR A HAEMOGLOBIN ASSESSMENT OF PREGNANT WOMEN

Response rate of pregnant women (age 15-44 years) for haemoglobin assessment by state / union territory, India, 2002-04

State / Union territory	Response rate (percent)	Percent invalid	Number of eligible pregnant women	Number of pregnant women covered	
				Weighted	Unweighted
Andhra Pradesh	65.2	9.6	1,042	601	614
Bihar	55.4	12.0	4,211	1,893	2,053
Chattisgarh	64.9	3.7	1,124	701	703
Delhi	59.3	9.5	499	263	268
Goa	66.3	17.0	80	44	44
Gujarat	72.3	3.9	1,625	1,134	1,129
Haryana	50.7	4.3	1,745	844	847
Himachal Pradesh	59.9	4.1	606	346	348
Jharkhand	63.8	0.2	1,535	977	977
Karnataka	54.1	9.0	1,502	605	739
Kerala	47.5	4.1	673	309	307
Madhya Pradesh	70.2	30.8	3,576	1,696	1,737
Maharashtra	76.1	12.0	2,053	1,414	1,375
Orissa	54.0	21.3	1,877	787	798
Punjab	58.9	9.1	1,196	583	641
Rajasthan	51.9	7.6	3,519	1,707	1,688
Tamil Nadu	77.2	9.7	1,661	1,132	1,158
Uttar Pradesh	51.5	8.2	7,579	3,604	3,585
Uttranchal	46.1	3.3	846	381	377
West Bengal	57.1	8.7	987	468	515
Other states[1]					
Jammu & Kashmir	64.6	0.0	158	102	102
Arunachal Pradesh	47.7	20.3	484	176	184
Assam	34.4	35.6	776	165	172
Manipur	44.9	0.0	383	172	172
Meghalaya	29.6	30.6	243	32	50
Mizoram	44.7	1.0	217	96	96
Nagaland	14.5	65.5	200	9	10
Sikkim	57.3	0.0	110	63	63
Tripura	96.5	0.0	114	110	110
Union territories					
A & N Islands	64.2	0.0	106	68	68
Chandigarh	38.8	0.0	49	19	19
Daman & Diu	56.3	11.1	96	50	48
Dadra & Nagar Haveli	80.3	10.5	71	51	51
Lakshadweep	51.5	5.9	66	32	32
Pondicherry	81.9	0.6	216	177	176
India	58.1	11.2	41,225	21,405	21,256

Note:[1] Data collected for half of the districts only.

CHAPTER III

NUTRITIONAL STATUS OF CHILDREN AND PREVALENCE OF ANAEMIA AMONG CHILDREN, ADOLESCENT GIRLS AND PREGNANT WOMEN IN INDIA

In the RCH programme emphasis has been given to monitor the nutritional status of children in terms of weight for age. The present analysis had to exclude children whose weight could not be measured either due to non-availability at home or refusal by parents or guardians. When making inference about nutritional status of children on the basis of weight-for-age index, the response rate should be kept in mind (Table 2.3 through 2.6 in the preceding chapter). The index value is also sensitive to age misreporting of children.

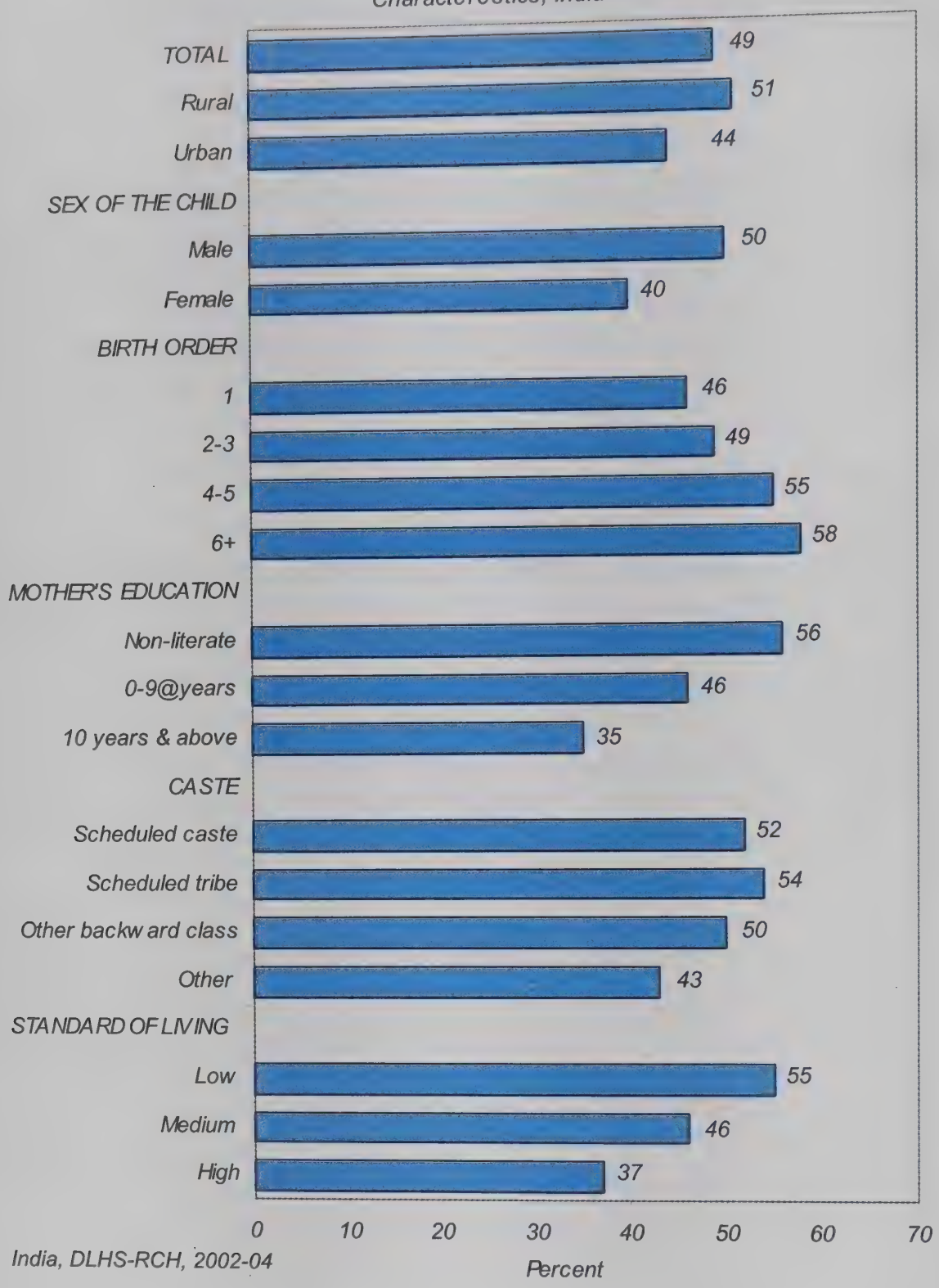
3.1 Weight for Age of Children

Table 3.1 shows the percentage of children under 6 years of age, classified into underweight categories, by some selected background characteristics. Around one-fifth of the children in India are severely underweight (i.e. below 3 standard deviation units and approximately half of the children are either moderately or severely underweight (i.e. below 2 standard deviation unit). The proportion of undernourished children increases rapidly with the child's age up to 12-23 months and shows improvement thereafter. More than one-fourth (27 percent) of the children in this age group are severely underweight whereas more than half (56 percent) of the children in the same age group are underweight. As for children in the age 48-71 months the corresponding figures for severely underweight and underweight children are 15 and 48 percent, respectively.

Birth order of the child is expected to influence the nutritional status of the child. The second round of the RCH Survey revealed that young children in families with six or more siblings are most vulnerable to be underweight. Whereas 17 and 46 percent of children of first birth order are severely underweight and underweight, respectively. The corresponding figures among children of birth order six or more are 27 and 58 percent, respectively. The sex differential in the category of severely underweight is not that pronounced whereas a marginal differential between male and female child is observed in case of underweight category, with female children showing lower proportion in under-weight category. The extent of underweight children, both severe and underweight, is higher in rural areas compared to that in urban areas. While around 16 and 44 percent of children in urban areas are severely underweight and underweight, the corresponding figures for rural areas are 21 and 51 percent, respectively.

Children's nutritional status is evidently influenced by mother's educational attainment. Children whose mothers are non-literate are about twice as likely to be severely underweight as compared to children whose mothers have ten or more years of schooling. The percentage of children classified as underweight also shows a sharp decline from 56 among non-literate mothers to 35 percent among mothers with ten or more years of schooling.

Figure 3.1
Percentage of Underweight Children (0-71 months) by Background Characterestics, India



India, DLHS-RCH, 2002-04

There is no significant difference in severely underweight and underweight children among Hindu and Muslim Christian, Sikh and Jain children are relatively better nourished which is reflected through their lower proportion of children classified as severely underweight (around 13 percent).

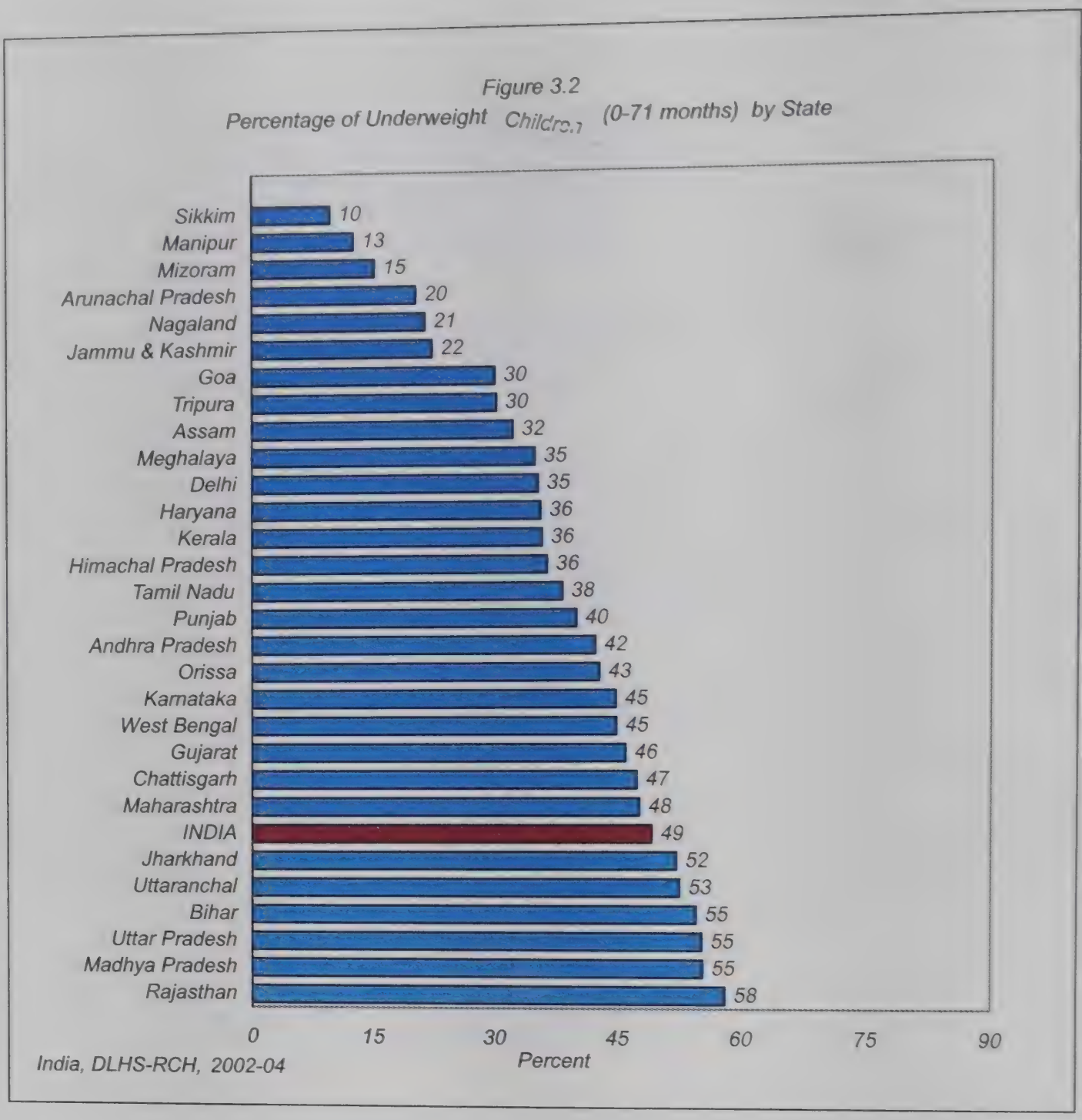
Table 3.1 WEIGHT FOR AGE OF CHILDREN

Percentage of children (age 0-71 months) classified as undernourished by weight for age anthropometric measure of nutritional status according to some selected background characteristics, India, 2002-04

Background characteristic	Weight for age		Number of eligible children	Response rate	Number of covered children (weighted)
	Percentage Below -3 SD	Percentage Below -2 SD[1]			
Age of child (in months)					
0-5	5.3	15.4	37,353	58.2	20,175
6-11	21.4	45.8	34,950	66.7	22,978
12-23	27.0	56.3	64,178	69.1	43,581
24-47	23.5	54.8	1,40,657	69.9	97,430
48-71	14.7	48.3	1,53,768	67.5	1,02,250
Birth order					
1	16.6	45.5	1,08,444	70.9	77,283
2-3	18.7	48.7	1,61,463	73.5	1,17,518
4-5	23.1	54.5	64,948	73.3	45,115
6+	26.5	57.8	33,436	73.1	23,571
Mother's not interviewed	18.5	45.2	62,615	38.2	22,927
Sex of the child					
Male	19.7	50.4	2,23,916	67.6	1,48,421
Female	19.1	47.9	2,05,888	67.9	1,37,994
Residence					
Rural	20.7	51.3	3,09,171	68.4	2,06,299
Urban	16.1	43.9	1,21,735	65.8	80,116
Mother's education					
Non-literate	24.0	55.9	1,90,761	72.9	1,37,116
0-9@years	16.3	46.3	1,07,396	74.8	78,705
10 years & above	11.7	35.4	60,709	71.5	41,961
Mother's not interviewed	17.8	45.3	72,040	39.8	28,633
Religion					
Hindu	19.8	49.7	3,36,223	68.5	2,31,298
Muslim	19.5	49.8	59,024	62.8	41,574
Christian	11.6	36.5	18,789	63.2	5,660
Sikh	13.6	37.5	8,321	73.0	4,303
Buddhist	17.5	49.9	4,348	71.4	2,458
Jain	14.2	38.5	1,130	62.2	672
Other	17.8	42.6	3,024	75.1	428
Caste/tribe#					
Scheduled caste	21.6	52.4	81,966	70.0	59,053
Scheduled tribe	23.2	53.5	60,575	68.6	29,918
Other backward class	20.0	50.3	1,73,348	67.7	1,19,199
Other	15.4	43.2	1,09,947	65.2	74,776
Standard of living index					
Low	23.2	55.2	2,19,760	68.4	1,48,836
Medium	16.9	46.1	1,28,643	67.8	86,130
High	12.7	37.0	82,456	65.5	51,428
Total	19.4	49.2	4,30,906	67.6	2,86,414

Note: This index is expressed in standard deviation units (SD) from the median of the International Reference Population. [1]Includes children who are below -3 SD from the International Reference Population median. @ Literate mothers with no years of schooling are also included. # Total of this group does not add up to total sample size due to don't know and missing case.

Figure 3.2
Percentage of Underweight Children (0-71 months) by State



Children from scheduled tribes have shown the highest percentage of both severely underweight and underweight children (23 and 54 percent respectively) whereas children belonging to the 'other castes' category are relatively better off among children of Hindus and Muslims. Household's standard of living is found to be strongly correlated with malnourishment of children as reflected through the weight for age anthropometric measure. More than one-fifth (23 percent) of the children belonging to households of lower standard of living are severely underweight and around 55 percent of the children in the same SLI category are underweight. However, the corresponding figures for children belonging to high standard of living households are 13 and 37 percent respectively. Figure 3.1 provides the graphical presentation of underweight children by selected background characteristics.

Table 3.2 WEIGHT FOR AGE OF CHILDREN BY STATE

Percentage of children (age 0-71 months) classified as undernourished by weight for age anthropometric measure of nutritional status according to state /union territory, India

State / union territory	Weight for age		Weighted number of children
	Percentage Below -3 SD	Percentage Below -2 SD[1]	
Andhra Pradesh	17.3	42.3	6,636
Bihar	23.5	54.6	25,506
Chattisgarh	19.2	47.4	7,479
Delhi	10.8	35.3	3,203
Goa	6.5	30.0	646
Gujarat	15.4	46.0	12,437
Haryana	13.3	35.6	11,587
Himachal Pradesh	12.4	36.4	3,917
Jharkhand	20.7	52.2	10,379
Karnataka	14.8	44.8	8,925
Kerala	9.3	35.8	4,226
Madhya Pradesh	24.1	55.4	27,100
Maharashtra	15.0	47.7	16,139
Orissa	15.2	42.8	14,999
Punjab	13.9	40.0	7,899
Rajasthan	28.4	58.1	20,374
Tamil Nadu	16.6	38.3	13,881
Uttar Pradesh	23.1	55.3	50,794
Uttaranchal	25.8	52.6	5,043
West Bengal	13.1	44.9	8,937
Other states[2]			
Jammu & Kashmir	7.0	22.3	1,956
Arunachal Pradesh	2.9	20.3	4,668
Assam	14.9	32.2	4,765
Manipur	2.3	12.6	3,059
Meghalaya	11.6	34.9	2,668
Mizoram	0.8	15.2	1,126
Nagaland	8.2	21.4	763
Sikkim	0.8	9.7	1,300
Tripura	5.9	30.2	539
Union territories			
A & N Islands	5.8	29.7	928
Chandigarh	10.3	35.4	195
Daman & Diu	13.2	43.8	875
Dadra & Nagar Haveli	16.1	49.1	634
Lakshadweep	13.8	42.2	616
Pondicherry	8.2	26.8	1,846
India	19.4	49.2	2,86,414

Note: This index is expressed in standard deviation units (SD) from the median of the International Reference Population. [1]Includes children who are below -3 SD from the International Reference Population median.[2] Only half of the districts were covered.

There is wide variation in the prevalence of underweight among children across states in India, as can be seen from Table 3.2 and Figure 3.2. The situation is considerably better in states like Sikkim, Mizoram, Manipur, and Arunachal Pradesh where the proportion of severely underweight children are less than 5 percent.

On the other hand, in the states of Rajasthan, Uttaranchal, Uttar Pradesh, Bihar, Jharkhand the percentage of severely underweight children are more than twenty percent. The lowest prevalence of underweight children is found in Sikkim (10 percent) and the highest in Rajasthan (58 percent).

Appendix A provides data on the percentage of underweight children (below −2 SD units) for the districts of India. Of the 548 districts with valid information on underweight children, in only 75 districts the percentage of underweight children is less than 30 percent. In 243 districts the percentage of underweight children is between 30 and 50 percent, and in 230 districts the percentage of underweight children is above 50 percent. Appendix B shows the state-wise distribution of districts falling under the categories of low, medium and high prevalence of underweight children.

Figure 3.3 shows the mapping of the districts according to the percentage of underweight children in the aforesaid three categories. From the map it is evident that districts with high prevalence of underweight children (more than 50 percent) are concentrated in the states of Rajasthan, Madhya Pradesh, Maharashtra, Uttar Pradesh, Uttaranchal, Bihar, Jharkhand and Chhattisgarh and in south-western part of Tamil Nadu and central Karnataka. On the other hand, most of the districts surveyed in Jammu & Kashmir and in northeast show low prevalence of underweight children (less than 30 percent). Interestingly, 7 out of 30 districts in Orissa show low prevalence of underweight children.

Figure 3.4 shows the mapping of the districts according to the percentage of severely underweight children (below –3 SD units). In this case, the prevalence is considered to be low if less than 10 percent of the children are severely underweight, moderate if this percentage is between `10 to 20 and high if this percentage is more than 20. The spatial pattern observed in the map is very similar to that of Figure 3.3, with the EAG states showing high concentration of districts having high prevalence of severely underweight children. Several districts of Maharashtra and a few districts of Tamil Nadu, Karnataka, Andhra Pradesh, Orissa and Gujarat also show high prevalence of severely underweight children. Appendix C shows the state-wise distribution of districts falling under the categories of low, medium and high prevalence of severely underweight children. Among the 548 districts with valid data on severely underweight children, 111 districts fall under the low category, 235 under the medium category and 202 under the high prevalence category.

Figure 3.3
Percentage of Underweight Children by District, 2002-04

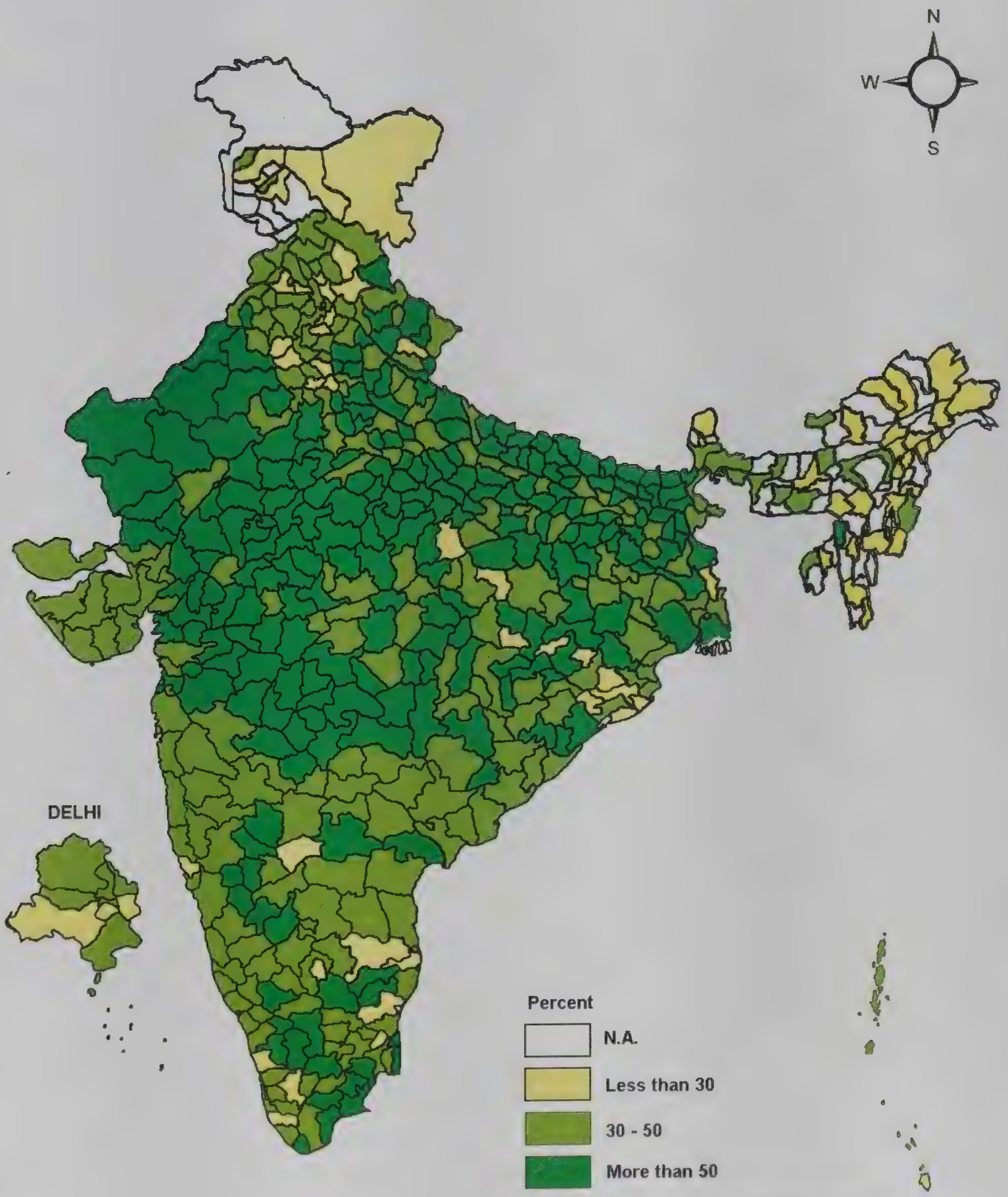
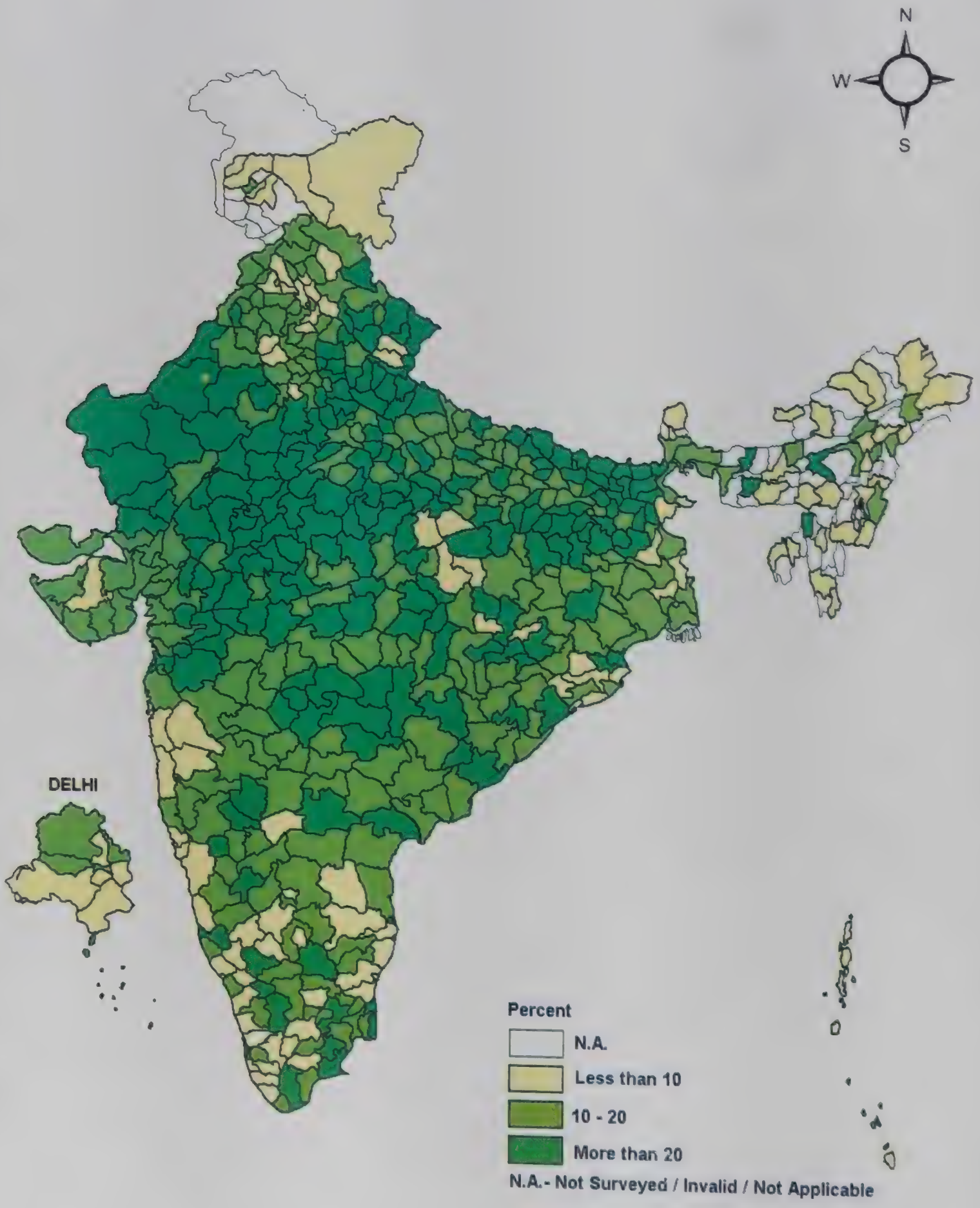


Figure - 3.4
Percentage of Severely Underweight Children by District, 2002-04



3.2 Anaemia Among Children, Adolescent Girls and Pregnant Women

A minimum level of haemoglobin in the blood is necessary in order to transfer the oxygen from lungs to different tissues and organs of the body. Low level of haemoglobin in the blood characterizes anaemia and it has detrimental effects on the health of children, adolescent girls and pregnant women in particular.

Children aged 6-24 months are most vulnerable to anaemia and it can result in impaired cognitive performance, behavioural and loco-motor development, coordination, language development and scholastic achievement, besides increasing morbidity from infectious diseases. Because of physiological and biological changes associated with age, adolescent girls need an optimum level of haemoglobin to prepare themselves for childbearing in due course of time. Through, the RCH programme is recommending iron and folic acid intake right from the adolescent stage itself, instead of the conventional practice of commencing from the stage of conception. Anaemia among pregnant women results in increased risk of premature delivery and delivery of low birth weight babies.

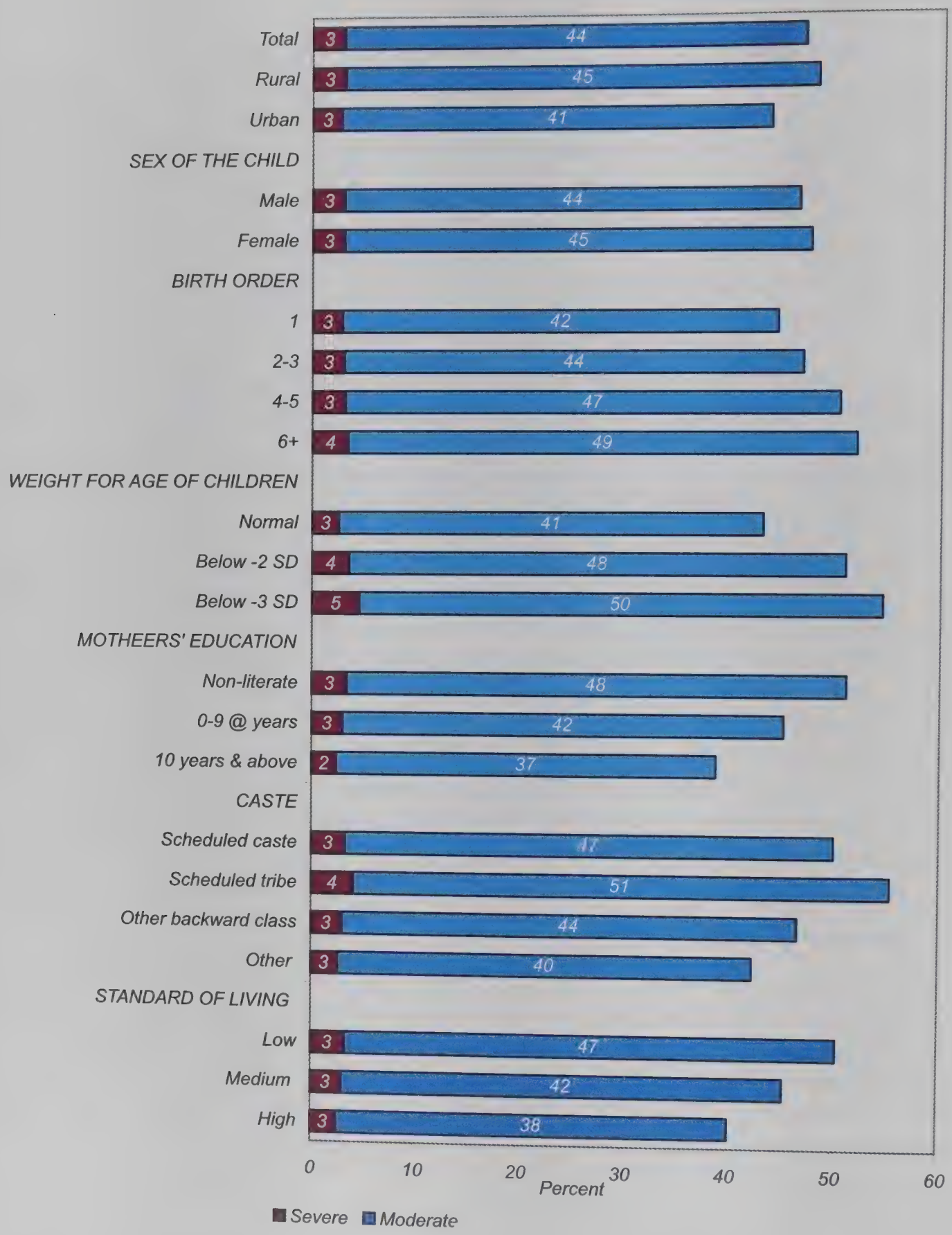
As anaemia is a serious health problem affecting vast majority of the population, DLHS-RCH undertook direct measurement of haemoglobin levels among children under 6 years of age, adolescent girls aged 10-19 years and pregnant women aged 15-44 years by collecting blood samples in the field using the filter paper technique.

On the basis of the measurement of haemoglobin level, children, adolescent girls and pregnant women classified as anaemic or not anaemic. Those who were identified as anaemic are further classified as suffering from mild, moderate and severe anaemia. The recommended level of haemoglobin for classifying pregnant women and children (6-71 months) into not anaemic, mildly, moderately and severely anaemic categories by the UNICEF are; a minimum of 11.0 g/dl, 8.0-10.9 g/dl, 5.0-7.9 g/dl and less than 5.0 g/dl, respectively, whereas for adolescent girls the recommended haemoglobin levels for the same categories are a minimum of 12.0 g/dl, 10.0-11.9 g/dl, 8.0-9.9 g/dl and less than 8.0 g/dl. However, NFHS-2 had used different cut offs for the classification of the degree of anaemia. For comparison, Appendices F,G, H and I provide percentage of children and pregnant women classified as mild, moderate and severe anaemic using DLHS-RCH data based on NFHS-2 cut offs.

3.2.1 Anaemia Among Children

Table 3.3 shows the percentage of children aged 0-71 months classified by the degree of anaemia and by selected background characteristics. Overall, more than 96 percent of these children have some level of anaemia, with 49 percent who are mildly anaemic, 44 percent who are moderately anaemic and 3 percent who are severely anaemic. Figure 3.5 shows the percentages of moderately and severely anaemic children by background characteristics, graphically. Some background characteristics of children are associated with high prevalence of anaemia. These are, children aged 6-11 months, children of higher birth order, more specifically, children of order six or more, children who are severely underweight, children from rural areas, children with non-literate mothers, Buddhist, Sikh and Hindu children, children of schedule castes and schedule tribes and children belonging to households characterized by low standard of living.

Figure 3.5
Percentage of Severely and Moderately Anaemic among Children (0-71 months) by Background Charateristics, India



India, DLHS -RCH, 2002-04

@: Literate mothers with no years of schooling are also included

Table 3.3 ANAEMIA AMONG CHILDREN

Percentage of children (age 0-71 months) classified as having iron-deficiency anaemia by degree of anaemia and by selected background characteristics, India, 2002-04

Background characteristic	Parentage of children with any anaemia	Percentage of children with			Number of eligible children	Response rate	Number of children covered
		Mild anaemia	Moderate anaemia	Severe anaemia			
Age of child (in months)							
0-5	96.0	42.1	50.0	3.9	37,353	39.0	12,587
6-11	97.8	39.2	54.5	4.1	34,950	51.7	16,003
12-23	97.6	37.7	55.7	4.3	64,178	56.3	32,831
24-47	96.7	47.9	45.5	3.3	1,40,657	58.6	74,705
48-71	95.2	58.2	34.9	2.1	1,53,768	58.3	80,694
Birth order							
1	95.9	51.4	41.7	2.9	1,08,444	58.5	58,019
2-3	96.3	49.3	43.9	3.1	1,61,463	61.1	89,231
4-5	96.8	46.2	47.3	3.2	64,948	60.8	34,524
6+	97.1	45.0	48.6	3.5	33,436	58.2	17,677
Mother's not interviewed	95.8	51.7	41.1	3.0	62,615	31.6	17,369
Sex of the child							
Male	96.2	49.6	43.5	3.1	2,23,916	55.9	1,12,617
Female	96.4	48.8	44.6	3.1	2,05,888	56.0	1,03,855
Weight for age of children							
Normal	95.6	52.4	40.7	2.6	2,86,573	43.0	1,10,375
Below – 2 SD[1]	97.0	46.0	47.5	3.6	1,44,333	81.4	1,06,446
Below – 3 SD	96.9	42.3	50.0	4.6	63,007	79.4	43,826
Residence							
Rural	96.4	48.1	45.1	3.2	3,09,171	57.2	1,58,737
Urban	96.1	52.2	41.1	2.8	1,21,735	52.4	58,083
Mother's education							
Non-literate	96.8	45.7	47.8	3.4	1,90,761	61.5	1,04,257
0-9@years	96.2	51.0	42.3	3.0	1,07,396	61.2	60,279
10 years & above	94.9	56.0	36.5	2.4	60,709	56.7	30,867
Mother's not interviewed	96.2	51.8	41.7	2.8	72,040	32.5	21,418
Religion							
Hindu	96.6	48.8	44.7	3.1	3,36,223	58.2	1,76,341
Muslim	95.2	51.6	40.7	2.9	59,024	47.8	30,618
Christian	90.3	57.7	30.6	2.0	18,789	35.4	3,949
Sikh	97.4	41.7	51.8	3.9	8,321	69.9	3,370
Buddhist	97.5	45.6	48.9	3.0	4,348	58.7	1,746
Jain	94.6	53.3	39.4	1.9	1,130	51.3	483
Other	90.1	45.7	44.0	0.4	3,024	43.1	299
Caste/tribe#							
Scheduled caste	97.3	47.2	46.8	3.3	81,966	60.0	45,554
Scheduled tribe	96.9	41.5	51.3	4.1	60,575	52.2	21,794
Other backward class	96.3	49.7	43.7	3.0	1,73,348	56.3	90,570
Other	95.4	52.9	39.8	2.6	1,09,947	54.3	56,587
Standard of living index							
Low	96.9	46.5	47.1	3.3	2,19,760	56.5	1,13,277
Medium	96.0	50.6	42.4	3.0	1,28,643	56.4	65,487
High	95.3	55.1	37.7	2.5	82,456	53.4	38,042
Total	96.3	49.2	44.0	3.1	4,30,906	55.9	2,16,820

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 – 7.9 g/dl is moderate anaemia and below 5 g/dl is severe anaemia. [1] Includes children who are below -3 SD from the International Reference median. @ Literate mothers with no years of schooling are also included. # Total of this group does not add up to total sample size due to don't know and missing case.

Figure 3.6
Percentage of Children (0-71 months) Suffering from Severe and Moderate Anaemia by State

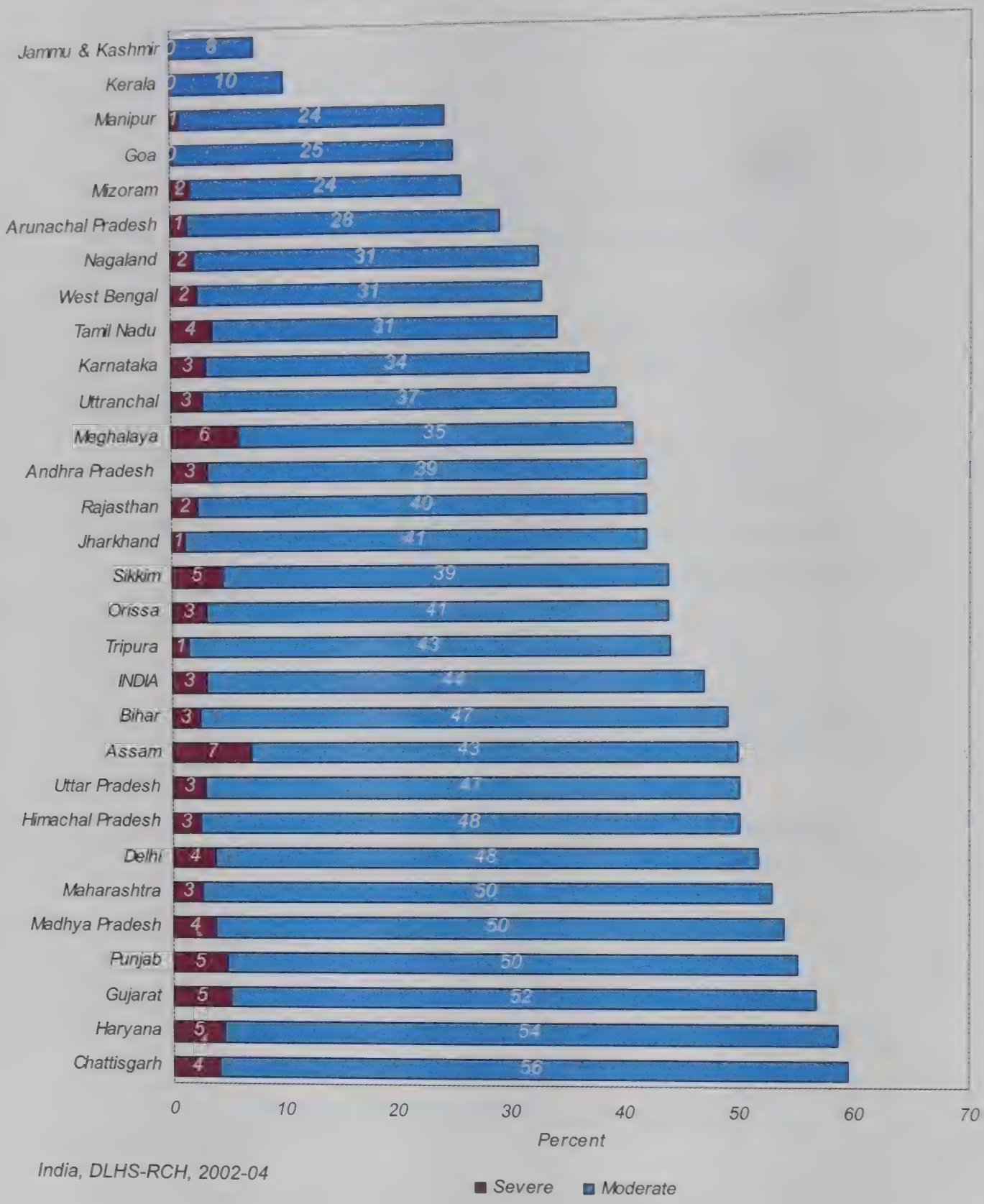


Table 3.4 shows the state-level variation in prevalence of anaemia among children by degree of anaemia. In most states, anaemia among children is over 90 percent. However, in Jammu and Kashmir, Uttaranchal and a few north eastern states, the percentage of anaemic children is relatively low. Wider geograp hical variation in anaemia is revealed when percentages of moderately and severely anaemic children are considered. Figure 3.6 shows the percenta ges of moderately and severely anaemic children by state, graphically.

Table 3.4 ANAEMIA AMONG CHILDREN BY STATE

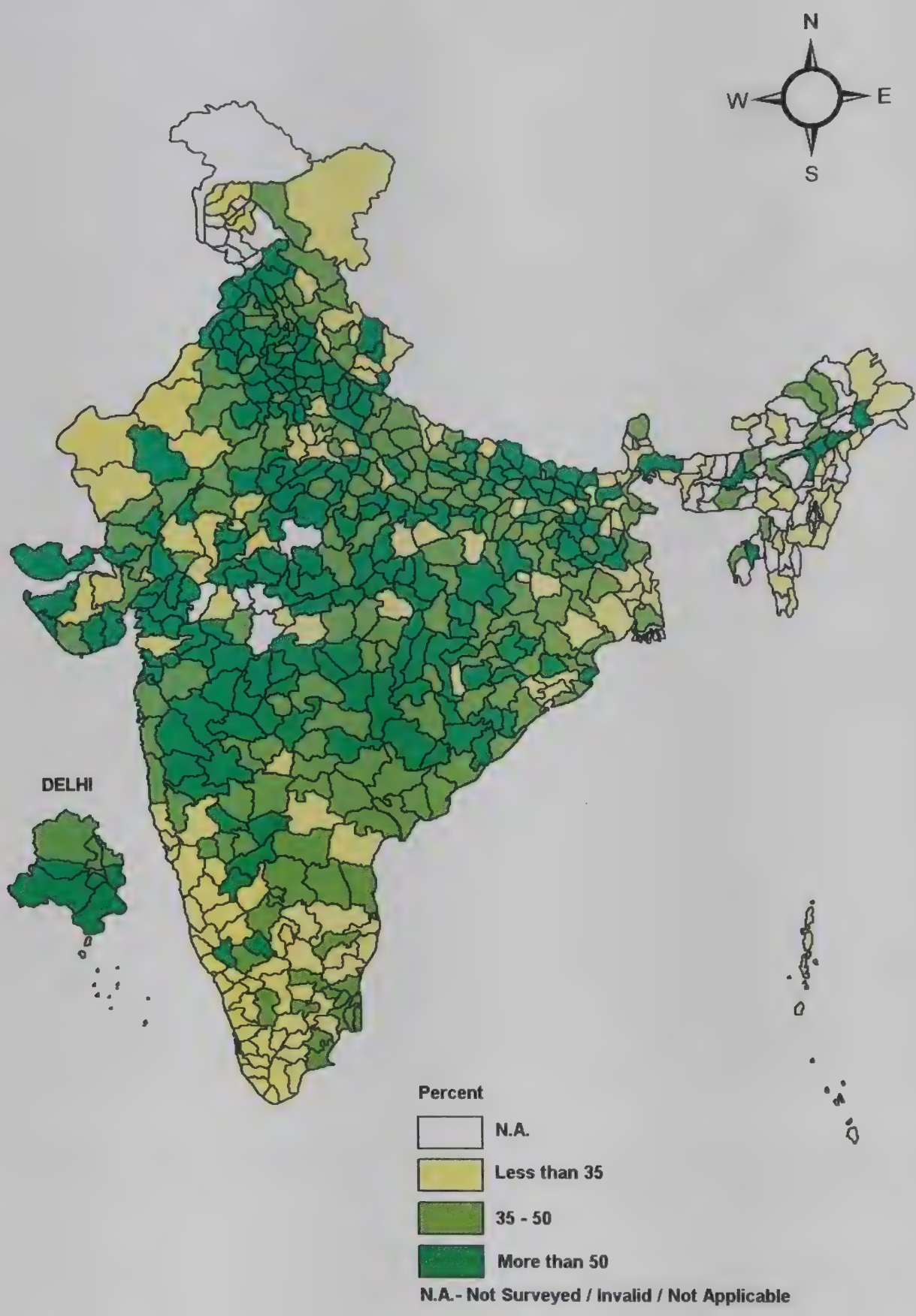
Percentage of children (age 0-71 months) classified as having iron-deficiency anaemia by degree of anaemia and by state /union territory, India

State / union territory	Percentage of children with any anaemia	Percentage of children with			Weighted number of children
		Mild anaemia	Moderate anaemia	Severe anaemia	
Andhra Pradesh	97.0	55.0	38.7	3.3	6,021
Bihar	97.6	48.5	46.6	2.5	15,797
Chattisgarh	96.9	37.3	55.5	4.1	6,931
Delhi	97.4	45.6	48.0	3.8	2,753
Goa	95.0	69.8	24.9	0.2	326
Gujarat	96.7	39.9	51.7	5.1	9,931
Haryana	97.2	38.6	54.1	4.6	11,227
Himachal Pradesh	97.4	47.2	47.7	2.5	2,984
Jharkhand	97.6	55.6	40.9	1.2	8,101
Karnataka	95.4	58.3	34.0	3.1	5,288
Kerala	89.6	79.4	10.2	0.0	1,658
Madhya Pradesh	95.8	41.8	50.2	3.8	17,747
Maharashtra	98.1	45.2	50.2	2.7	13,196
Orissa	97.6	53.7	40.9	3.1	11,005
Punjab	97.4	42.2	50.2	4.9	6,719
Rajasthan	96.6	54.4	39.7	2.4	18,453
Tamil Nadu	94.5	60.2	30.6	3.7	10,639
Uttar Pradesh	96.2	46.0	47.1	3.0	40,848
Uttranchal	81.0	41.5	36.6	2.8	4,682
West Bengal	97.3	64.3	30.7	2.3	6,844
Other states[1]					
Jammu & Kashmir	52.7	45.1	7.5	0.0	1,817
Arunachal Pradesh	55.0	25.6	27.9	1.4	2,334
Assam	95.7	45.7	42.9	7.1	1,849
Manipur	44.6	20.1	23.6	0.8	2,076
Meghalaya	98.7	57.9	34.9	6.0	68
Mizoram	56.4	30.5	24.1	1.8	656
Nagaland	87.3	54.7	30.5	2.1	243
Sikkim	64.9	21.0	39.4	4.6	698
Tripura	74.3	30.2	42.7	1.4	361
Union territories					
A & N Islands	71.5	51.9	17.8	1.8	870
Chandigarh	97.3	32.9	61.1	3.4	149
Daman & Diu	99.9	39.4	56.9	3.5	618
Dadra & Nagar Haveli	99.6	9.3	79.7	10.7	497
Lakshdweep	95.0	70.5	23.0	1.4	139
Pondicherry	97.9	62.5	33.1	2.3	1,619
India	96.3	49.2	44.0	3.1	2,16,820

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. [1] Only half of the districts were covered.

Among the states, the combined percentage of moderately and severely anaemic children is highest in Chattisgarh (60 percent). In Haryana, Punjab, Gujarat, Maharashtra, Madhya Pradesh, Uttar Pradesh, Delhi, Himachal Pradesh and Assam more than half of the children are either moderately or severely anaemic. The combined prevalence of moderate and severe anaemia is lowest in Jammu and Kashmir (8 percent) followed by Kerala (10 percent), Goa (25 percent) and some north-eastern states. Its level is below 40 percent in Tamil Nadu, Karnataka, West Bengal and Uttaranchal.

Figure - 3.7
Percentage of Children with Moderate or Severe Anaemia by District, 2002-04



In Appendix D, we have categorized the districts as having low, medium or high prevalence anaemia among children under six years if the percentage of children with moderate or severe anaemia in a district is, respectively, below 35 percent, between 35 and 50 percent and above 50 percent. As per this classification, prevalence of anaemia among children is low in 149 districts, moderate in 181 and high in 213 districts. Figure 3.7 shows mapping of districts according to prevalence of anaemia among children using the aforesaid categorization. The map clearly shows that prevalence of anaemia is relatively low in south India, Jammu and Kashmir and in northeast. On the other hand, most of the districts in EAG states, Orissa, Maharashtra, Gujarat, Punjab, Haryana and Himachal Pradesh show either high or moderate prevalence of anaemic children. It is worth noting that states such as Punjab and Haryana, in spite of being economically and agriculturally more advanced than other states, show relatively high prevalence of moderate and severe anaemia among children. But these states do show relatively low prevalence of underweight children, which is consistent with their prosperity level.

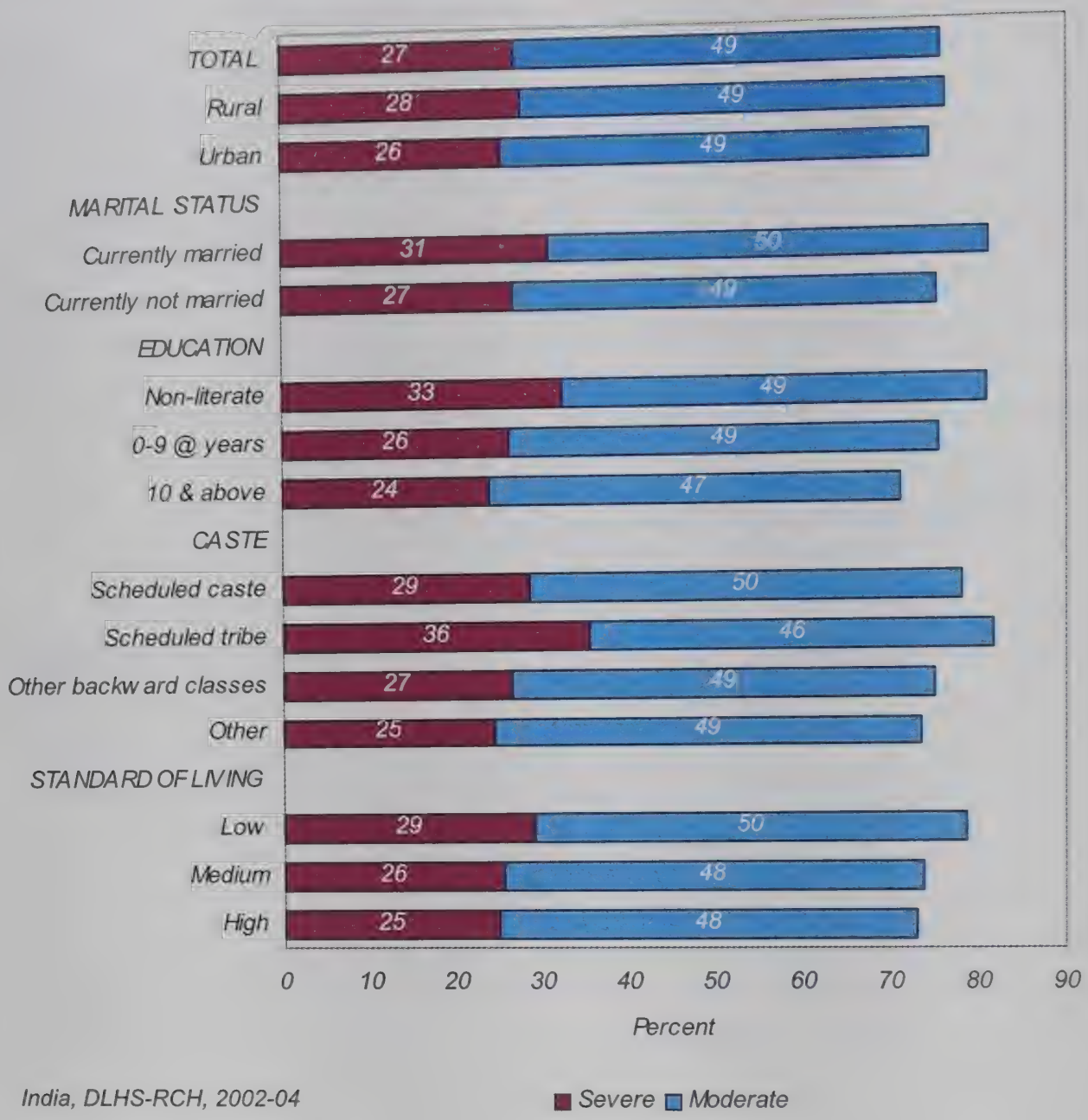
3.2.2 Anaemia Among Adolescents Girls

The prevalence of anaemia among adolescent girls aged 10-19 years by selected background characteristics is shown in Table 3.5. Figure 3.8 depicts the same for moderately and severe anaemic adolescents girls. In India, overall, 98 percent of adolescent girls have any anaemia. Twenty two percent of them are mildly anaemic, 49 percent are moderately anaemic and 27 percent are suffering from severe anaemia. It has been found from the survey results that the extent of mild and moderate anaemia among adolescent girls diminishes gradually with the age from 10-14 to 15-19, but for this age range the incidence of severe anaemia increase with age. The incidence of severe anaemia is lower among adolescent girls who are currently unmarried (27 percent) compared to their married counterpart (31 percent). The rural-urban differentials in the prevalence of anaemia among adolescent girls are negligible. The prevalence of severe anaemia among adolescent girls reduces marginally with the increase in educational attainment from 33 percent among non-literate adolescent girls to 24 percent among those who have completed ten or more years of education.

The highest level of severe anaemia is found among Sikh adolescent girls (35 percent), while Christian and Jain adolescent girls show much lower levels (18 and 20 percent, respectively). Muslim girls show relatively low levels of severe anaemia (24 percent) than Hindu girls (28 percent). Caste-tribe differences are not that pronounced in the case of severe anaemia. As expected, prevalence of severe anaemia is lower among adolescent girls from households with high standard of living (25 percent) compared to those from low standard of living (29 percent).

Figure 3.8

Percentage of Severly and Moderately Anaemic Adolescent Girls, (10-19 years) by Background Characteristics, India



India, DLHS-RCH, 2002-04

Table 3.5 ANAEMIA AMONG ADOLESCENT GIRLS

Percentage of adolescent girls[1] (age 10-19 years) classified as having iron-deficiency anaemia by degree of anaemia and by selected background characteristics, India, 2002-04

Background characteristic	Parentage of adolescents with any anaemia	Percentage of adolescents with			Number of eligible adolescent girls	Response rate	Number of adolescent girls covered
		Mild anaemia	Moderate anaemia	Severe anaemia			
Age (in years)							
10-14	97.9	22.0	49.5	26.5	1,70,234	59.2	90,914
15-19	97.6	21.8	47.8	28.0	1,42,336	56.4	74,238
Marital status							
Currently married	98.5	17.2	50.3	31.0	41,707	29.6	13,610
Currently not married	97.7	22.3	48.6	26.8	3,03,745	55.6	1,51,518
Residence							
Rural	97.8	21.3	48.6	27.9	2,33,156	52.3	1,10,696
Urban	97.8	23.2	49.0	25.6	1,12,445	52.6	54,456
Education							
Non-literate	98.3	17.2	48.5	32.6	70,838	43.7	28,685
0-9@years	97.9	22.3	49.2	26.4	2,26,067	55.2	1,12,597
10 years & above	97.0	25.8	47.1	24.1	48,696	52.4	23,870
Religion							
Hindu	98.2	21.2	49.1	27.8	2,64,677	54.3	1,32,378
Muslim	96.7	24.9	47.6	24.2	49,244	47.3	24,092
Christian	90.6	32.6	39.6	18.4	15,814	33.5	3,363
Sikh	99.1	15.8	48.4	34.9	7,707	69.3	3,106
Buddhist	97.5	19.0	51.4	27.1	4,356	47.8	1,428
Jain	98.4	26.4	51.7	20.2	1,214	56.2	556
Other	95.8	18.9	51.6	25.4	2,562	30.4	221
Caste/tribe#							
Scheduled caste	98.3	20.0	49.5	28.8	61,439	54.9	32,126
Scheduled tribe	97.5	15.6	46.2	35.7	47,216	44.7	14,287
Other backward class	97.8	22.7	48.5	26.6	1,33,844	53.1	67,751
Other	97.5	23.8	49.2	24.5	99,358	53.6	49,304
Standard of living index							
Low	98.2	19.3	49.5	29.3	1,54,615	50.1	72,502
Medium	97.4	23.5	48.1	25.7	1,10,599	54.3	55,025
High	97.7	24.5	48.1	25.1	80,387	54.1	37,625
Total	97.8	21.9	48.7	27.2	3,45,601	52.4	1,65,152

Note: Haemoglobin level between 10.0 - 11.9 g/dl is mild anaemia, 8.0 - 9.9 g/dl is moderate anaemia and below 8.0 g/dl is severe anaemia. [1] Includes currently married women age 15-19 years who were not pregnant at the time of survey. @ Literate adolescent with no years of schooling are also included. # Total of this group does not add up to total sample size due to don't know and missing case.

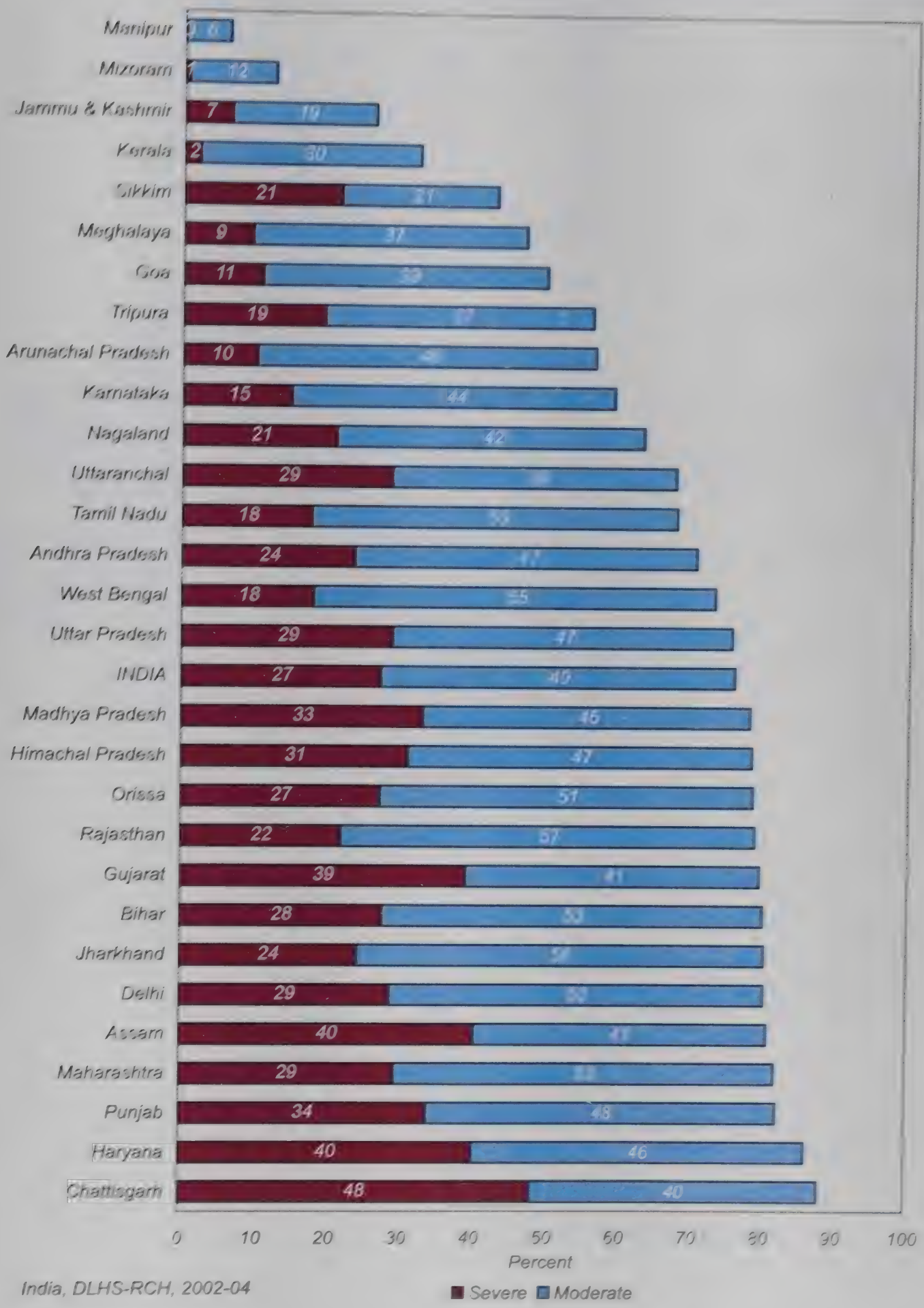
The state-level data on the prevalence of moderate and severe anaemia among adolescent girls are presented in Table 3.6. But as the prevalence of any anaemia is almost universal in India, we get a better picture of the state level variation when the percentages of moderately and severely anaemic girls are considered. Figure 3.9 shows a graphical representation of the state-level variation in the prevalence of moderate and severe anaemia among adolescent girls. The state of Chattisgarh has the highest percentage of adolescent girls who are either moderately or severely anaemic (88) followed by Haryana (86).

In the states of Andhra Pradesh, Bihar, Delhi, Gujarat, Himachal Pradesh, Jharkhand, Madhya Pradesh, Maharashtra, Orissa, Punjab, Uttar Pradesh and West Bengal, the combined prevalence of either moderate or severe anaemia among adolescent girls is in the range of 70-80 percent. The states where this percentage is between 50 and 70 percent included Karnataka, Tamil Nadu, Uttaranchal, Arunachal Pradesh, Tripura, and Nagaland. In the rest of the states in India, the percentage of adolescent girls who are either moderately or severely anaemic is less than 50. Among them, the low percentages in Jammu and Kashmir (26) and Kerala (32) are noteworthy.

Figure 3.10 shows the mapping of districts according to the percentage of moderately or severely anaemic adolescent girls. For mapping, districts have been classified into low, moderate and high prevalence categories if the percentage of moderately or severely anaemic adolescent girls is below 50, between 50 and 75 and above 75, respectively. High concentration of anaemic adolescent girls is found in the districts of EAG states, Gujarat, Maharashtra, Punjab, Haryana, Orissa and Assam. Prevalence of anaemia among adolescent girls is relatively low in south India, Jammu and Kashmir and in northeast, excluding Assam.

Appendix E provides data on the distribution of districts having low, medium and high percentage of moderately or severely anaemic adolescent girls, by state. In India as whole, only 61 out of 542 districts fall in the category of low prevalence of moderately anaemic adolescent girls, 186 districts fall in the medium prevalence and 295 districts in high prevalence categories. In more than 50 percent of the districts of Uttar Pradesh, Madhya Pradesh, Bihar, Rajasthan, Gujarat, Maharashtra, Punjab, Haryana, Orissa and Assam more than three-fourth of adolescent girls in the age group 10-19 years are either moderately or severely anaemic. Whereas none of the districts in Kerala, Jammu & Kashmir, Goa and north eastern region (excluding Assam) falls in this category. It is remarkable that states such as Punjab and Haryana, despite being economically and agriculturally more advanced than other states, show relatively high prevalence of moderate and severe anaemia among adolescent girls.

Figure 3.9
Percentage of Severely and Moderately Anaemic Adolescent Girls, (10-19 years) by State



India, DLHS-RCH, 2002-04

Table 3.6 ANAEMIA AMONG ADOLESCENT GIRLS BY STATE

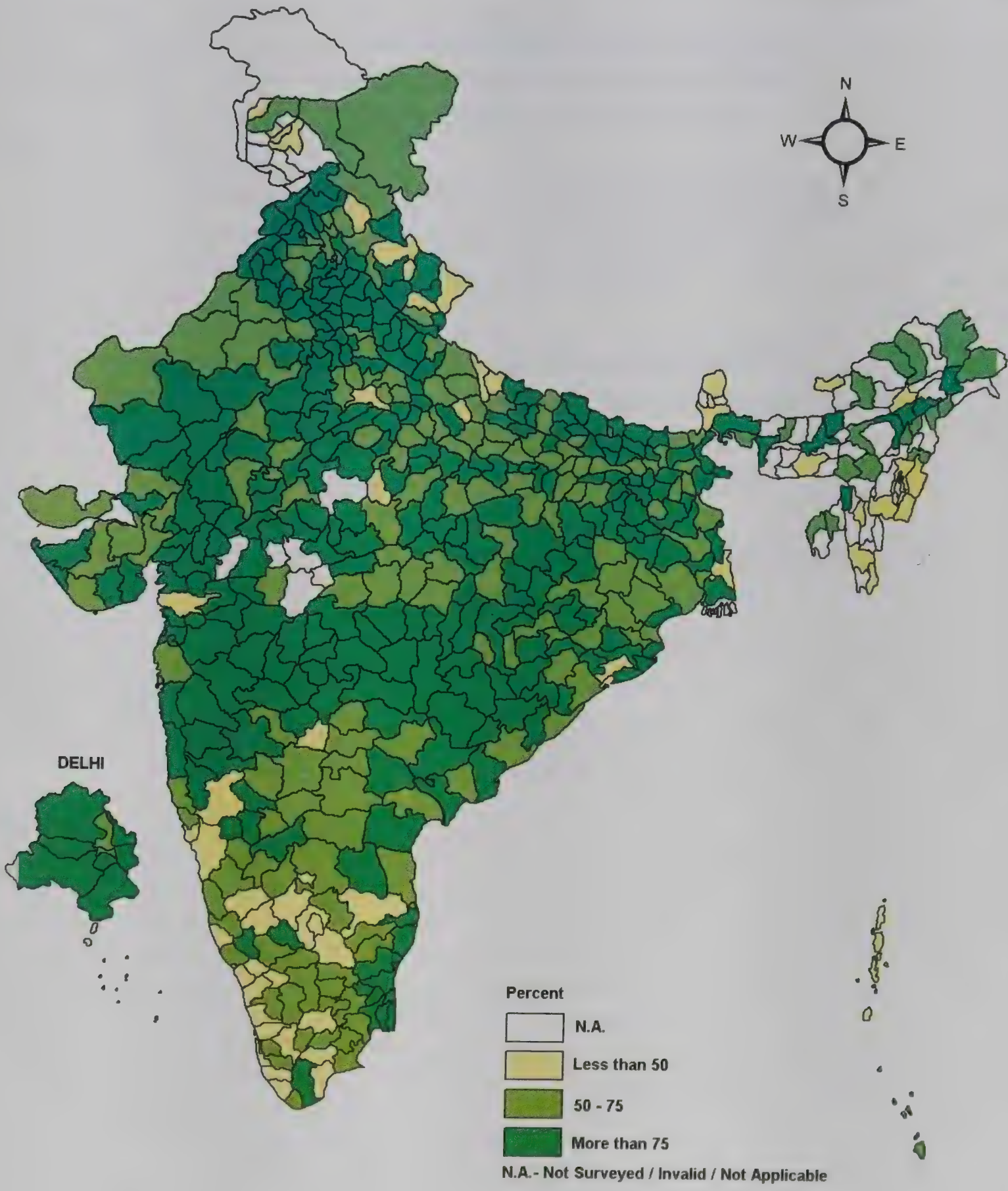
Percentage of adolescent girls[1] (age 10-19 years) classified as having iron-deficiency anaemia and by degree of anaemia by state /union territory, India

State / union territory	Percentage of girls with any anaemia	Percentage of adolescent with			Weighted number of adolescent girls
		Mild anaemia	Moderate anaemia	Severe anaemia	
Andhra Pradesh	98.2	27.7	46.9	23.6	4,713
Bihar	99.1	19.1	52.5	27.6	9,594
Chattisgarh	99.1	11.0	39.8	48.3	5,311
Delhi	99.2	18.8	51.6	28.7	2,123
Goa	96.6	47.1	38.7	10.8	309
Gujarat	98.6	19.0	40.6	39.0	7,820
Haryana	99.4	13.2	46.0	40.2	8,731
Himachal Pradesh	99.1	20.7	47.4	31.0	2,343
Jharkhand	99.5	19.1	56.1	24.2	5,500
Karnataka	96.4	37.4	44.1	14.8	6,150
Kerala	90.4	58.4	29.8	2.2	1,445
Madhya Pradesh	98.5	20.2	45.1	33.2	11,978
Maharashtra	99.2	17.3	52.5	29.4	11,193
Orissa	98.3	19.6	51.4	27.2	8,582
Punjab	98.9	16.7	48.3	33.9	6,310
Rajasthan	99.1	20.2	57.0	21.9	12,663
Tamil Nadu	96.7	28.9	50.0	17.7	8,325
Uttar Pradesh	97.8	22.3	46.7	28.8	26,811
Uttaranchal	90.6	23.0	38.9	28.6	5,104
West Bengal	98.3	25.3	55.1	18.0	5,185
Other states[2]					
Jammu & Kashmir	65.1	39.2	19.4	6.5	3,375
Arunachal Pradesh	78.1	21.9	46.1	10.1	931
Assam	96.5	15.7	40.5	40.3	1,883
Manipur	33.0	26.9	5.9	0.2	1,101
Meghalaya	97.7	51.1	37.2	9.4	198
Mizoram	45.1	32.9	11.6	0.7	546
Nagaland	93.6	30.3	42.3	21.0	683
Sikkim	74.8	32.1	21.2	21.4	439
Tripura	77.5	21.7	36.5	19.3	399
Union territories					
A & N Islands	73.8	42.4	23.0	8.5	511
Chandigarh	98.6	16.4	55.7	26.4	140
Daman & Diu	100.0	7.1	47.5	45.3	548
Dadra & Nagar Haveli	100.0	0.8	22.0	77.2	246
Lakshadweep	94.8	65.7	22.8	6.4	329
Pondicherry	99.3	19.2	66.4	13.8	1,409
India	97.8	21.9	48.7	27.2	1,65,152

Note: Haemoglobin level between 10.0 - 11.9 g/dl is mild anaemia, 8.0 - 9.9 g/dl is moderate anaemia and below 8.0 g/dl is severe anaemia.[1] Includes currently married women age 15-19 years who were not pregnant at the time of survey. [2] Only half of the districts were covered.

Figure - 3.10

Percentage of Adolescent Girls with Moderate or Severe Anaemia by District, 2002-04



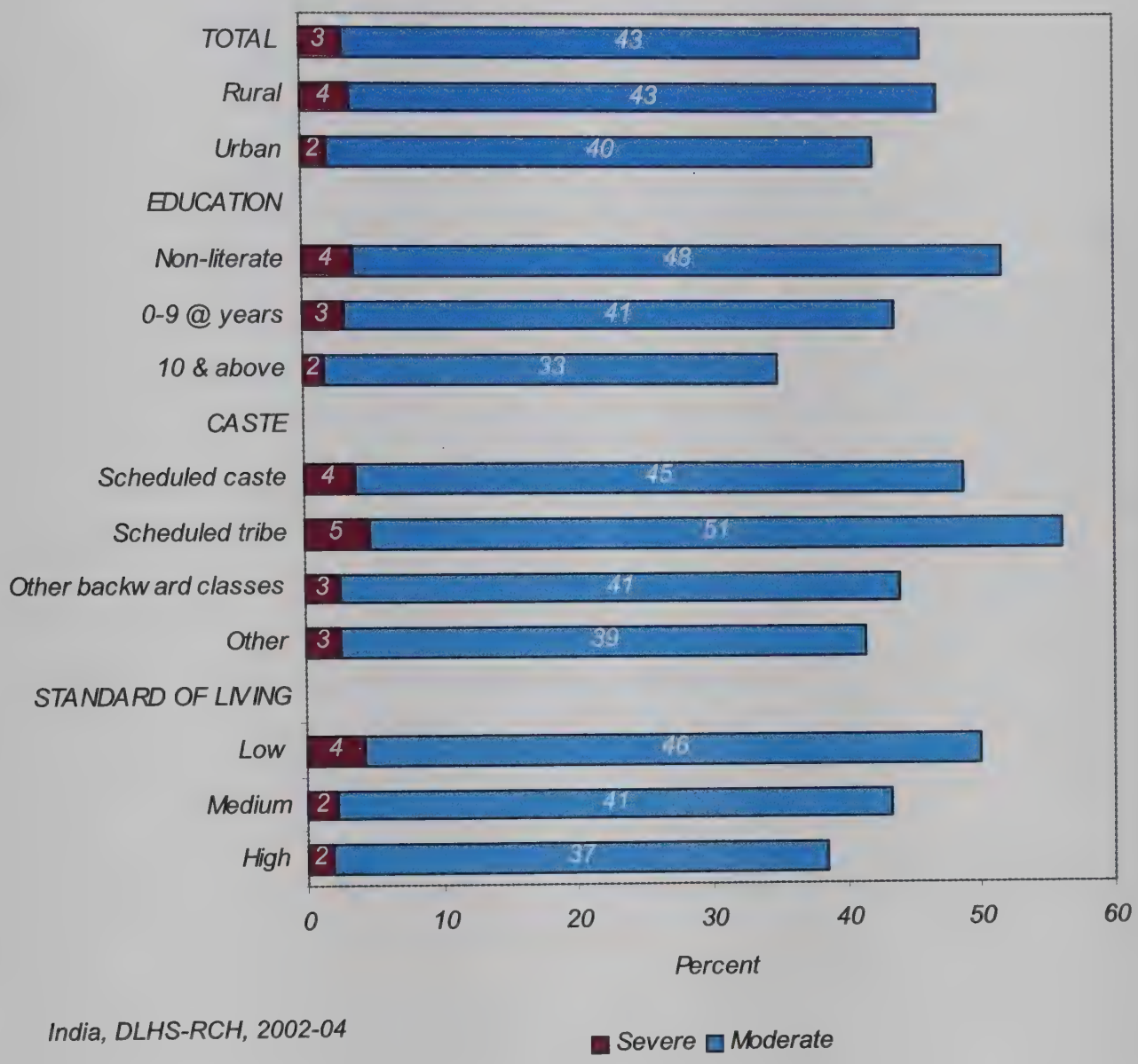
3.2.3 Anaemia among Pregnant Women

The prevalence of anaemia among pregnant women of age 15-44 years by selected background characteristics is shown in Table 3.7. Around 96 percent of the pregnant women in India are suffering from some degree of anaemia. It includes 51 percent of women who are suffering from mild anaemia, 42 percent from moderate anaemia and 3 percent from severe anaemia. As the data suggest that prevalence of any anaemia among women is almost universal in India, differentials could be seen only when data on moderate and severe anaemia are examined. Figure 3.11 shows the variation in the percentage of women who are suffering from moderate and severe anaemia by selected background characteristics in the graphical form. The prevalence of either moderate or severe anaemia among pregnant women increases from 45 percent among women aged 15-19 to 49 percent among women aged 35-39. Pregnant women residing in urban areas are less likely to have either moderate or severe anaemia (42 percent) than their rural counterparts (47 percent). The prevalence of moderate or severe anaemia decreases steadily with the level of educational attainment of pregnant women. While 52 percent of the non-literate women have either moderate or severe anaemia, its prevalence is 35 percent among those who have completed ten or more years of education.

The prevalence of either moderate or severe anaemia during pregnancy is found to be highest among Sikh women (60 percent), followed by Buddhist women (52 percent), while its prevalence is lowest among Christian women (25 percent). Hindu women show higher level of anaemia during pregnancy (46 percent) than Muslim women (42 percent). Women of scheduled tribes have higher level of anaemia during pregnancy (56 percent) than either SC women (49 percent), or OBC women (44), or women belonging to other castes (41 percent). As expected, standard of living is inversely associated with the anaemia status of pregnant women. About half of the pregnant women belonging to poor families are either moderately or severely anaemic compared to 39 percent of women belonging to households with higher standard of living.

The data on prevalence of anaemia among pregnant women aged 15-44 years in states and union territories are shown in Table 3.8. In most of the states, the prevalence of any anaemia among pregnant women is over 90 percent. However, in Jammu and Kashmir and in many north-eastern states (other than Assam) its prevalence is substantially low (30-60 percent). Wider state–level differentials are seen when the percentages of women having either moderate or severe anaemia are examined (see Figure 3.12). The highest prevalence of either moderate or severe anaemia is found in Assam (66 percent), followed by Chattisgarh (61 percent). In Punjab, Haryana, Madhya Pradesh, Gujarat and Maharashtra, the combined prevalence of moderate and severe anaemia is more than 50 percent. In south India and West Bengal the combined prevalence of moderate and severe anaemia is lower than 40 percent. In Kerala, it is only 5 percent. It is worth noting that states such as Punjab and Haryana, despite being economically and agriculturally more advanced than other states, show relatively high prevalence of moderate and severe anaemia among pregnant women and adolescent girls.

Figure 3.11
Percentage of Severely and Moderately Anaemic Pregnant Women (15-44 years) by Background Characteristics, India



India, DLHS-RCH, 2002-04

Table 3.7 **ANAEMIA AMONG PREGNANT WOMEN**

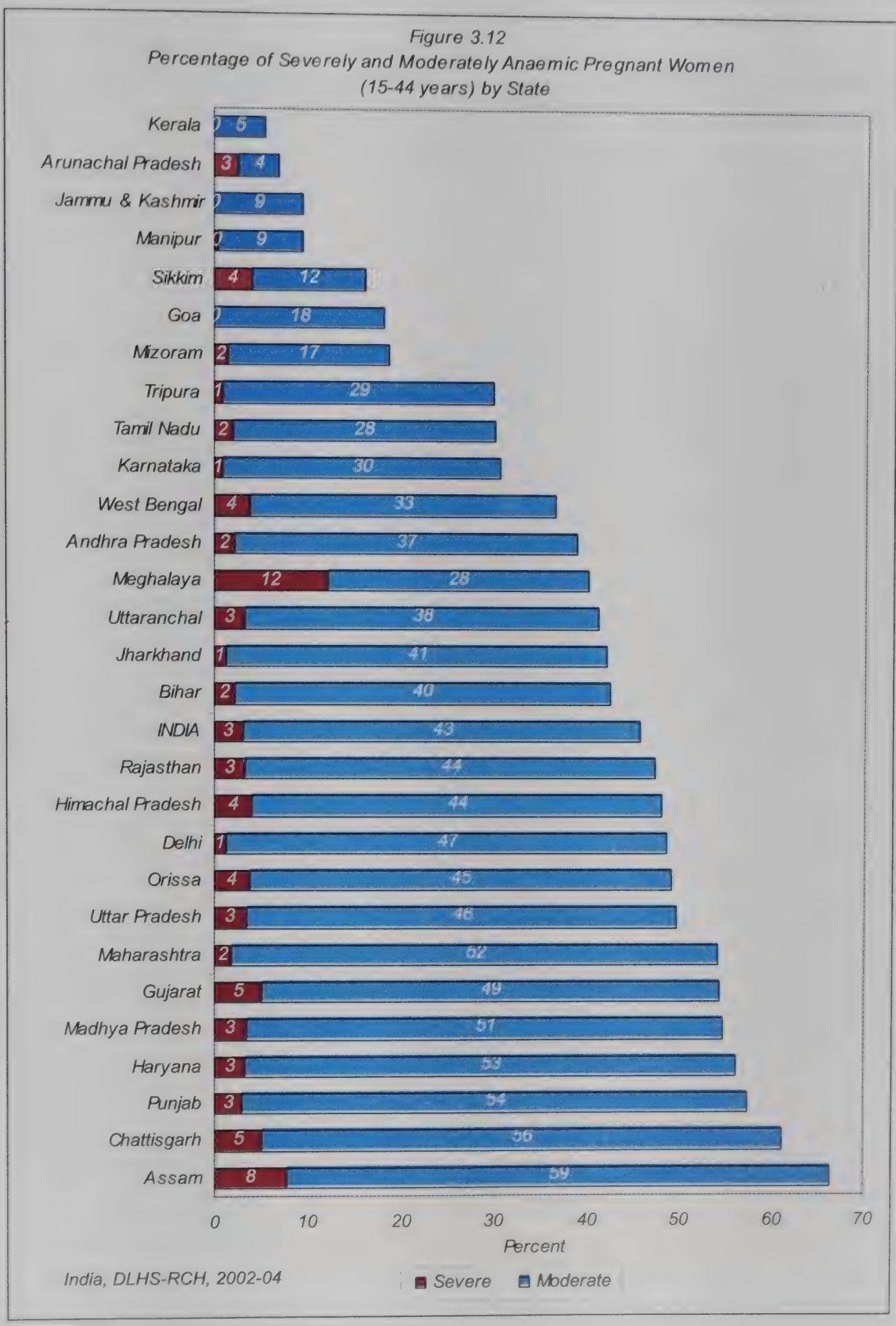
Percentage of pregnant women (age 15-44 years) classified as having iron-deficiency anaemia by degree of anaemia and by selected background characteristics, India, 2002-04

Background characteristic	Parentage of pregnant women with any anaemia	Percentage of pregnant women with			Number of eligible pregnant women	Response rate	Number of pregnant women covered
		Mild anaemia	Moderate anaemia	Severe anaemia			
Age (in years)							
15-19	96.6	51.5	42.3	2.8	8,167	60.7	5,041
20-24	96.3	51.7	41.5	3.1	17,099	59.6	9,133
25-29	96.2	49.6	43.4	3.2	9,878	57.0	4,724
30-34	95.3	47.4	44.4	3.4	4,043	53.6	1,777
35-39	96.3	47.0	45.6	3.7	1,549	48.8	570
40-44	96.9	48.9	43.8	4.3	489	46.8	161
Residence							
Rural	96.5	49.7	43.3	3.6	29,990	58.6	15,577
Urban	95.5	53.3	40.3	1.8	11,235	56.6	5,828
Education							
Non-literate	96.9	45.3	47.8	3.8	20,272	57.0	9,623
0-9@years	96.0	52.3	40.6	3.1	13,180	60.8	7,736
10 years & above	95.3	60.4	33.4	1.6	7,744	56.3	4,043
Religion							
Hindu	96.5	50.1	43.2	3.2	32,543	60.0	17,266
Muslim	95.2	53.5	39.1	2.5	5,494	51.0	3,051
Christian	91.2	65.9	23.0	2.3	1,542	45.5	453
Sikh	98.5	37.7	56.8	4.0	942	57.0	372
Buddhist	99.2	47.4	50.0	1.7	393	60.6	202
Other	88.2	51.8	34.9	1.6	310	49.0	61
Caste/tribe#							
Scheduled caste	97.1	48.3	45.0	3.7	8,350	60.1	4,679
Scheduled tribe	96.4	40.3	51.2	4.8	5,460	58.6	2,180
Other backward class	96.1	52.2	41.3	2.6	16,852	58.4	8,706
Other	95.8	54.4	38.8	2.6	10,115	55.5	5,604
Standard of living index							
Low	96.8	47.0	45.7	4.2	20,654	57.8	10,246
Medium	95.8	52.4	41.0	2.3	12,619	60.2	7,206
High	95.7	57.1	36.8	1.8	7,952	55.4	3,953
Total	96.2	50.7	42.5	3.1	41,225	58.1	21,405

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 – 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. @ Literate women with no years of schooling are also included. # Total of this group does not add up to total sample size due to don't know and missing case.

Although the data on district-level estimates of anaemia among pregnant women are shown in Appendix A, as the district sample of pregnant women in DLHS-RCH is generally inadequate to make meaningful estimates, they are not discussed here.

Figure 3.12
Percentage of Severely and Moderately Anaemic Pregnant Women (15-44 years) by State



India, DLHS-RCH, 2002-04

Table 3.8 ANAEMIA AMONG PREGNANT WOMEN BY STATE

Percentage of pregnant women (age 15-44 years) classified as having iron-deficiency anaemia and by degree of anaemia by state /union territory, India

State / union territory	Percentage of pregnant women with any anaemia	Percentage of pregnant with			Weighted number of pregnant women
		Mild anaemia	Moderate anaemia	Severe anaemia	
Andhra Pradesh	96.6	57.8	36.7	2.1	601
Bihar	97.1	54.7	40.2	2.2	1,893
Chattisgarh	97.6	36.4	56.1	5.1	701
Delhi	95.1	46.5	47.3	1.3	263
Goa	(93.2)	(75.0)	(18.2)	(0.0)	44
Gujarat	98.4	44.1	49.2	5.1	1,134
Haryana	96.7	40.5	52.8	3.3	844
Himachal Pradesh	97.2	49.2	44.0	4.0	346
Jharkhand	97.8	55.8	40.7	1.3	977
Karnataka	91.9	61.5	29.5	0.9	605
Kerala	90.1	84.6	5.4	0.0	309
Madhya Pradesh	96.9	42.2	51.2	3.4	1,696
Maharashtra	98.3	44.3	52.3	1.8	1,414
Orissa	97.5	48.5	45.3	3.8	787
Punjab	98.1	40.8	54.4	2.9	583
Rajasthan	96.2	49.0	43.9	3.3	1,707
Tamil Nadu	94.1	64.1	28.1	1.9	1,132
Uttar Pradesh	95.8	46.2	46.2	3.4	3,604
Uttaranchal	85.5	44.2	38.0	3.2	381
West Bengal	97.2	60.9	32.7	3.7	468
Other states[1]					
Jammu & Kashmir	57.4	48.1	9.3	0.0	102
Arunachal Pradesh	33.2	26.4	4.2	2.6	176
Assam	97.0	30.7	58.6	7.8	165
Manipur	32.7	23.4	9.0	0.4	172
Meghalaya	(100.0)	(60.0)	(28.0)	(12.0)	32
Mizoram	42.8	24.2	17.1	1.5	96
Nagaland	*	*	*	*	9
Sikkim	45.6	29.6	12.1	4.0	63
Tripura	62.9	33.2	28.9	0.9	110
Union territories					
A & N Islands	70.6	50.4	19.2	1.0	68
Chandigarh	*	*	*	*	19
Daman & Diu	(100.0)	(31.3)	(66.7)	(2.1)	50
Dadra & Nagar Haveli	100.0	7.8	88.2	3.9	51
Lakshadweep	(90.0)	(78.1)	(12.5)	(0.0)	32
Pondicherry	95.0	74.5	16.9	3.6	177
India	96.2	50.7	42.5	3.1	21,405

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia.[1] Only half of the districts were covered. *Percentage not shown: because cases are very few. ( ) Based on less than 50 unweighted cases.

CHAPTER IV

NUTRITIONAL STATUS OF CHILDREN AND PREVALENCE OF ANAEMIA AMONG CHILDREN, ADOLESCENT GIRLS AND PREGNANT WOMEN STATE LEVEL ANALYSIS

4.1 ANDHRA PRADESH

4.1.1 Weights for Age of Children:

In Andhra Pradesh, weight was measured for 50 percent of children under 6 years of age in sampled households. On the whole, data on weight are available for nearly 7 thousand children in the state. Table 4.1.1 shows the percentage of children under 6 years of age classified as undernourished, as measured by weight for age index by some selected background characteristics. In the following discussion, children whose weight in SD unit (Z score) is less than –3 would be referred to as 'severely underweight' and those with weight in SD unit less than –2 would be referred to simply as 'underweight'. Slightly less than one-fifth (17 percent) of the children in Andhra Pradesh are severely underweight and more than two-fifth (42 percent) of the children are underweight. The proportion of undernourished children increases rapidly with the child's age upto 12-23 months and shows improvement thereafter. More than one-fifth (21 percent) of the children in this age group are severely underweight whereas slightly less than half (47 percent) of the children in the same age group are moderately underweight. By the age 48-71 months the corresponding figures for severely underweight and underweight children stabilize at 15 and 41 percent respectively.

Birth order of the child is expected to influence the nutritional status of the child to a great extent. The second round of RCH Survey revealed that young children in families with six or more siblings are most vulnerable to be underweight. Whereas 17 and 44 percent of children of first order are severely underweight and underweight respectively, the corresponding figures among children of birth order six or more are 21 and 46 percent respectively. Sex differential in the categories of being severely underweight or underweight is quite pronounced among children of this state. The extent of underweight children, both severe underweight and underweight, is pretty high in rural areas compared to that in urban areas. While around 14 and 37 percent children in urban areas are severely underweight and underweight, the corresponding figures for rural areas are 19 and 45 percent respectively.

Children's nutritional status is expected to be influenced by mother's educational attainment. Children whose mothers are non-literate are about twice as likely to be severely underweight as compared to children whose mothers have ten or more years of schooling. In the case of underweight children also, the contribution of non-literate mothers is substantially higher compared to that of mothers with some education, that is, upto 9 years as well as mothers with ten or more years of schooling. One thing that has to be kept in mind in this connection, is a sizeable proportion of children with severely underweight or underweight, whose mothers have not been interviewed limits the quality of this weight for age data.

Table 4.1.1 WEIGHT FOR AGE OF CHILDREN

Percentage of children (age 0-71 months) classified as undernourished by weight for age anthropometric matrix of nutritional status according to some selected background characteristics, Andhra Pradesh, 2002-04

Background characteristic	Weight for age		Number of children
	Percentage Below – 3 SD	Percentage Below – 2 SD[1]	
Age of child (in months)			
0-5	10.1	22.5	346
6-11	18.1	38.2	555
12-23	21.7	47.0	1,070
24-47	18.5	45.1	2,294
48-71	15.1	41.3	2,371
Birth order			
1	17.3	43.5	2,283
2-3	17.3	42.1	3,068
4-5	21.3	44.7	473
6+	20.8	46.0	113
Mother's not interviewed	14.0	36.6	698
Sex of the child			
Male	19.2	45.5	3,381
Female	15.3	39.0	3,254
Residence			
Rural	18.8	44.8	4,480
Urban	14.2	37.1	2,156
Mother's education			
Non-literate	21.2	46.7	3,052
0-9@years	16.1	43.1	1,632
10 years & above	11.2	33.2	1,239
Mother's not interviewed	14.3	37.1	711
Religion			
Hindu	17.3	42.5	5,533
Muslim	16.6	39.7	759
Christian	18.9	43.7	329
Caste/tribe#			
Scheduled caste	20.1	45.5	1,246
Scheduled tribe	27.3	48.6	463
Other backward class	16.6	43.4	3,118
Other	14.0	36.5	1,767
Standard of living index			
Low	21.9	47.1	2,601
Medium	16.3	41.5	2,667
High	10.5	34.6	1,368
Total	17.3	42.3	6,636

Note: This index is expressed in standard deviation units (SD) from the median of the International Reference Population. [1]Includes children who are below -3 SD from the International Reference Population median. @ Literate mothers with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. Total includes 14 children of other religions that were not shown separately

The results of the RCH survey show that Hindu, Muslim and Christian children are equally likely to be undernourished. The percentage of underweight children among Christians and Hindus is respectively 44 and 43 percent. Children from scheduled tribes have the highest percentage of both severely underweight and underweight cases (27 and 49 percent respectively) whereas children belonging to the 'other caste' category are relatively better off among all the castes. Household's standard of living is strongly correlated with the malnourishment of children as reflected through weight for age anthropometric measure. More than one-fifth (22 percent) of the children belonging to households of lower standard of living are severely underweight and around 47 percent of the children in the same category are underweight. However, the corresponding figures for children belonging to households with high standard of living are 11 and 35 percent respectively.

Of the 23 districts in the state, in 1 district the percentage of underweight children in less than 30, in 19 districts their percentage is between 30 and 50, and in 3 districts their percentage is more than 50. Central part of the state shows high prevalence of underweight children.

4.1.2 Anaemia among Children, Adolescent Girls, and Pregnant Women

In Andhra Pradesh, haemoglobin level was measured for 51 percent of children under 6 years of age in sampled households. On the whole, the data on haemoglobin level are available for over 6 thousand children in the state. Table 4.1.2 shows the percentage distribution of children aged 0-71 months classified by the degree of anaemia and by selected background characteristics. Overall, more than 95 percent of these children have some level of anaemia, including 55 percent who are mildly anaemic, 39 percent who are moderately anaemic and 3 percent who are severely anaemic. Certain background characteristics of children show strong association with the level of anaemia. Some of them are: children aged 6-11 and 12-23 months (99 percent), children of higher birth order, more specifically, children of order four to five (99 percent), female children (97 percent), children who are severely underweight (97 percent), children from rural areas (98 percent), children of non-literate mothers (97 percent), Christian children (98 percent), children of schedule castes (98 percent) and children belonging to households characterized by low and medium standard of living (97 percent).

Of the 23 districts in the state, in 4 districts the percentage of children with severe or moderate anaemia is in less than 35, in 17 districts their percentage is between 35 and 50, and in 2 districts their percentage is more than 50. Districts with high prevalence of anaemia among children are situated mainly in eastern part of the state.

Data on anaemia levels are available for over four thousand adolescent girls aged 10-19 years who constituted 45 percent of the sample. Table 4.1.3 depicts anaemia level for adolescent girls aged 10-19 years by selected background characteristics. In Andhra Pradesh, overall, 98 percent of adolescent girls have any anaemia. Twenty eight percent of them are mildly anaemic, 47 percent are moderately anaemic and 24 percent are experiencing severe anaemia. It has been found from the survey results that in case of

mild and moderate anaemia diminish gradually with the age from 10-14 to 15-19. However no age differential is found in case of any anaemia but in case of severe anaemia increases with the increase in age. The incidence of severe anaemia is higher (29 percent) among adolescent girls who are currently married compared to that among their unmarried counterparts (23 percent). The rural-urban differential for the incidence of anaemia, even by its degree, is not remarkable. The educational differential in levels of anaemia is not found to be strong. The highest levels of anaemia are evident among Christian adolescent girls (100 percent). However, Hindu and Muslim adolescent girls are also near by or equal to the state average. Caste wise difference is already pronounced in the case of any anaemia as well as in its different sub categories. The prevalence of anaemia does not vary much with the household's standard of living.

Of the 23 districts in the state, in 1 district the percentage of adolescent girls with severe or moderate anaemia is in less than 50, in 13 districts their percentage is between 50 and 75, and in 9 districts their percentage is more than 75. Districts with high prevalence of anaemia among adolescent girls are situated mainly in north-east and southern parts of the state.

Haemoglobin levels were measured for 600 pregnant women aged 15-44 years who constituted 65 percent of the sample. Table 4.1.4 shows the anaemia status among pregnant women according some selected background characteristics. Around 97 percent of the pregnant women in Andhra Pradesh are suffering from some anaemia. Among pregnant women, 58 percent have mild anaemia, 37 percent who have moderate anaemia and one percent has severe anaemia. Thus, although levels of any anaemia among pregnant women and adolescent girls are about the same, the prevalence of severe anaemia is substantially higher in adolescent girls (24 percent) than in pregnant women (2 percent). This may be because more stringent cut-off level for severe anaemia has been used in the case of adolescent girls (8 g/dl) than in the case of pregnant women (5 g/dl). Table 4.1.4 clearly shows that percentage of pregnant women with any anaemia decreases steadily with the increase in the age of the pregnant women from 97 percent for the age group 15-19 to 96 percent in the age group 30-34. Women, from rural areas are more anaemic than their urban counterpart. The prevalence of anaemia decreases marginally with the level of educational attainment of the pregnant women except mild anaemia. The religious difference in levels of anaemia is not found to be strong. Pregnant women among scheduled castes are more prone to be anaemic (77 percent) among all the caste/tribe categories. As expected, standard of living is negatively associated with the anaemia status of the pregnant women. Almost 100 percent pregnant women belonging to poor families are anaemic compared to 92 percent among women belonging to households with higher standard of living.

Table 4.1.2 ANAEMIA AMONG CHILDREN

Percentage of children (age 0-71 months) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Andhra Pradesh, 2002-04

Background characteristic	Parentage of children with any anaemia	Percentage of children with			Number of children
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age of child (in months)					
0-5	96.5	46.5	43.9	6.2	262
6-11	98.6	43.0	51.6	3.9	479
12-23	98.6	41.2	52.7	4.7	974
24-47	97.3	51.9	41.8	3.6	2,102
48-71	95.6	67.6	26.1	1.9	2,205
Birth order					
1	96.7	53.3	40.4	2.9	2,039
2-3	97.0	53.5	39.7	3.9	2,817
4-5	98.7	56.8	39.7	2.2	440
6+	95.5	59.0	32.6	3.8	100
Mother's not interviewed	96.7	65.3	28.8	2.7	625
Sex of the child					
Male	96.9	54.1	39.3	3.6	3,066
Female	97.0	55.9	38.1	3.1	2,955
Weight for age of children					
Normal	96.6	57.2	36.8	2.6	3,792
Below – 2 SD[1]	97.6	51.2	41.9	4.4	2,229
Below – 3 SD	97.5	46.6	44.8	6.1	924
Residence					
Rural	97.5	52.7	41.2	3.5	4,154
Urban	95.9	60.1	33.0	2.8	1,867
Mother's education					
Non-literate	97.4	51.2	42.8	3.4	2,800
0-9@years	97.0	53.9	39.4	3.7	1,489
10 years & above	95.9	60.5	32.7	2.8	1,094
Mother's not interviewed	96.8	65.0	29.0	2.8	638
Religion					
Hindu	97.0	54.9	38.7	3.4	5,028
Muslim	96.6	56.5	37.7	2.4	693
Christian	98.0	52.2	41.4	4.4	287
Caste/tribe#					
Scheduled caste	98.0	52.8	40.9	4.3	1,102
Scheduled tribe	96.5	47.7	45.6	3.2	419
Other backward class	97.3	55.7	38.2	3.4	2,884
Other	95.8	57.4	35.9	2.5	1,579
Standard of living index					
Low	97.3	51.9	42.1	3.2	2,346
Medium	97.4	54.2	39.6	3.6	2,455
High	95.5	62.4	30.2	2.9	1,220
Total	97.0	55.0	38.7	3.3	6,021

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. [1] Includes children who are below – 3 SD from the International Reference median. @ Literate mothers with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. Total includes 13 cases of other religions that were not shown separately.

Table 4.1.3 ANAEMIA AMONG ADOLESCENT GIRLS

Percentage of adolescent girls[1] (age 10-19 years) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Andhra Pradesh, 2002-04

Background characteristic	Parentage of adolescent with any anaemia	Percentage of adolescent with			Number of adolescent girls
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
10-14	98.3	29.4	47.7	21.2	2,521
15-19	98.2	25.8	45.9	26.5	2,192
Marital status					
Currently married	97.6	24.2	44.2	29.1	580
Currently not married	98.3	28.2	47.2	22.9	4,132
Residence					
Rural	98.7	25.6	48.5	24.6	3,095
Urban	97.3	31.8	43.7	21.8	1,618
Education					
Non-literate	98.0	24.3	45.7	28.0	906
0-9@years	98.3	29.1	47.8	21.4	2,804
10 years & above	98.3	27.1	45.3	26.0	1,003
Religion					
Hindu	98.3	27.9	46.9	23.5	3,906
Muslim	97.0	29.5	46.1	21.5	584
Christian	100.0	19.2	49.1	31.8	218
Caste/tribe#					
Scheduled caste	98.6	25.0	46.7	26.9	904
Scheduled tribe	98.2	28.3	51.6	18.3	273
Other backward class	98.5	27.4	47.3	23.8	2,091
Other	97.7	29.7	45.7	22.2	1,396
Standard of living index					
Low	99.1	25.1	47.3	26.7	1,597
Medium	98.0	28.3	47.5	22.2	2,036
High	97.4	30.5	45.2	21.7	1,080
Total	98.2	27.7	46.9	23.6	4,713

Note: Haemoglobin level between 10.0 - 11.9 g/dl is mild anaemia, 8.0 - 9.9 g/dl is moderate anaemia and below 8.0 g/dl is severe anaemia. [1] Includes currently married women age 15-19 years who were not pregnant at the time of survey. @ Literate adolescent with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. In religion 5 case of other religions and 1 missing case in marital status that were not shown separately.

Table 4.1.4 ANAEMIA AMONG PREGNANT WOMEN

Percentage of pregnant women (age 15-44 years) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Andhra Pradesh, 2002-04

Background characteristic	Parentage of pregnant women with any anaemia	Percentage of pregnant women with			Number of pregnant women
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
15-19	97.0	55.3	38.3	3.4	217
20-24	96.9	60.7	35.1	1.1	271
25-29	96.2	53.7	40.5	2.0	86
30-34	(96.2)	(61.5)	(34.6)	(0.0)	25
Residence					
Rural	98.7	55.2	40.5	2.9	422
Urban	91.6	64.0	27.7	0.0	179
Education					
Non-literate	97.0	52.6	40.6	3.8	260
0-9@years	96.7	55.8	40.5	0.5	200
10 years & above	95.7	70.4	24.1	1.2	141
Religion					
Hindu	97.0	56.8	38.1	2.1	495
Muslim	92.8	63.7	29.1	0.0	77
Other	(100.0)	(58.3)	(37.5)	(4.2)	29
Caste/tribe#					
Scheduled caste	97.7	65.7	27.0	5.0	133
Scheduled tribe	(96.6)	(27.6)	(65.5)	(3.4)	29
Other backward class	97.6	53.5	42.4	1.7	267
Other	94.9	63.9	30.7	0.3	169
Standard of living index					
Low	99.6	51.8	42.1	5.6	200
Medium	96.3	58.3	37.8	0.2	283
High	92.1	66.8	24.7	0.6	118
Total	96.6	57.8	36.7	2.1	601

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 -7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. @ Literate women with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. Total includes 1 &1 case in age group 35-39 &40-44 category and 3 don't know cases in castes that were not shown separately. ( ) Based on less than 50 unweighted cases.

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4.2 ARUNACHAL PRADESH

4.2.1 Weight for Age of Children:

In Arunachal Pradesh, weight was measured for 76 percent of children under 6 years of age in sampled households. On the whole, data on weight are available for nearly 5 thousand children in the state. Table 4.2.1 shows the percentage of children under 6 years of age classified as undernourished, as measured by weight for age index by some selected background characteristics. In the following discussion, children whose weight in SD unit (Z score) is less than –3 would be referred to as 'severely underweight' and those with weight in SD unit less than –2 would be referred to simply as 'underweight'. Around three percent of the children in Arunachal Pradesh are severely underweight and one-fifth of the children are underweight. The proportion of undernourished children increases rapidly with the child's age upto 12-23 months and shows improvement thereafter. Nearly 5 percent of the children in this age group are severely underweight whereas 29 percent of the children in the same age group are underweight. By the age 48-71 months the corresponding figures for severely underweight and underweight children stabilize at 2 and 13 percent respectively.

Birth order of the child is expected to influence the nutritional status of the child to a great extent. The second round of RCH Survey revealed that young children in families with four to five siblings are most vulnerable to be underweight. Whereas 3 and 21 percent of children of first birth order are severely underweight and underweight respectively, the corresponding figures among children of birth order fourth to fifth are 4 and 22 percent respectively. Sex differential in both the categories of severely underweight and underweight is quite pronounced and male children are found at a disadvantageous position. The extent of underweight children, both severe underweight and underweight, is pretty high in rural areas compared to that in urban areas. While around 2 and 18 percent children in urban areas are severely underweight and underweight, the corresponding figures for rural areas are 3 and 21 percent respectively.

Children's nutritional status is expected to be influenced by mother's educational attainment. Children whose mothers are non-literate are about twice as likely to be severely underweight as compared to children whose mothers have ten or more years of schooling. In the case of underweight children also, the contribution of non-literate mothers is substantially higher compared to that of mothers with some education, that is, upto 9 years as well as mothers with ten or more years of schooling.

The results of the RCH survey show that Hindu, Christian and Buddhist children are more or less equally likely to be undernourished. The percentage of underweight children among Hindus and Buddhist is respectively 21 and 28 percent. Muslim children and children belonging to other religious communities are relatively better nourished which is reflected through the lesser concentration of children who are severely underweight. Children from scheduled tribes have the highest percentage of both severely underweight and underweight cases (4 and 21 percent, respectively) whereas children belonging to the 'other caste' category are relatively better off among all the castes.

Table 4.2.1 WEIGHT FOR AGE OF CHILDREN

Percentage of children (age 0-71 months) classified as undernourished by weight for age anthropometric matrix of nutritional status according to some selected background characteristics, Arunachal Pradesh, 2002-04

Background characteristic	Weight for age		Number of children
	Percentage Below – 3 SD	Percentage Below – 2 SD[1]	
Age of child (in months)			
0-5	0.7	11.4	357
6-11	3.9	24.1	444
12-23	5.1	28.6	787
24-47	2.9	23.9	1,537
48-71	2.2	13.4	1,543
Birth order			
1	2.7	21.1	1,208
2-3	2.9	20.7	2,097
4-5	3.8	21.9	886
6+	2.9	16.1	281
Mother's not interviewed	1.4	9.4	195
Sex of the child			
Male	3.9	26.2	2,397
Female	2.0	14.0	2,271
Residence			
Rural	3.4	21.2	3,438
Urban	1.7	17.8	1,230
Mother's education			
Non-literate	3.4	21.1	2,534
0-9@years	2.6	18.7	1,496
10 years & above	1.6	20.1	571
Mother's not interviewed	4.0	26.3	66
Religion			
Hindu	3.7	21.3	1,809
Muslim	0.8	14.6	157
Christian	3.6	22.7	777
Buddhist	2.9	27.7	548
No Religion	4.5	28.5	107
Other	1.6	14.2	1,269
Caste/tribe#			
Scheduled caste	2.0	20.5	
Scheduled tribe	3.5	20.8	382
Other backward class	2.5	20.6	3,018
Other	1.7	17.7	308
			818
Standard of living index			
Low	3.6	21.3	2,580
Medium	2.5	19.5	1,436
High	1.5	18.0	652
Total	2.9	20.3	4,668

Note: This index is expressed in standard deviation units (SD) from the median of the International Reference Population. [1]Includes children who are below – 3 SD from the International Reference Population median. @ Literate mothers with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases.

Household's standard of living is negatively associated with the malnourishment of children as reflected through the weight for age anthropometric measure. Around 4 percent of the children belonging to households of lower standard of living are severely underweight and around 21 percent of the children in the same category are underweight. However, the corresponding figures for children belonging to high standard of living households are 2 and 18 percent, respectively.

Of the 7 districts in the state, in 6 districts the percentage of underweight children in less than 30 and in 1 district their percentage is between 30 and 50. North-western part of the state shows moderate prevalence of underweight children.

4.2.2 Anaemia among Children, Adolescent Girls, and Pregnant Women

In Arunachal Pradesh, haemoglobin level was measured for 47 percent of children under 6 years of age in sampled households. On the whole, the data on haemoglobin level are available for over 2 thousand children in the state. Table 4.2.2 shows the percentage distribution of children aged 0-71 months classified by the degree of anaemia and by selected background characteristics. Overall, 55 percent of these children have some level of anaemia, including 26 percent who are mildly anaemic, 28 percent who are moderately anaemic and 1 percent who are severely anaemic. There are certain background characteristics of children showing association with high level of anaemia. Some of them are: children aged 12-23 months (59 percent), children of higher birth order, more specifically, children of order four to five (60 percent), female children (56 percent), children who are underweight (56 percent), children from urban areas (58 percent), children of whose mothers have non-literate and ten or more years schooling (55 percent), Muslim children (59 percent), children of schedule castes (58 percent) and children belonging to households characterized by medium standard of living (58 percent). But even in the socio-economic groups with the lowest level of anaemia, more than half of children are anaemic. On the other hand, in no socio-economic groups, the prevalence of severe anaemia is more than one percent.

Of the 7 districts in the state, in 5 districts the percentage of children with severe or moderate anaemia is in less than 35, in 2 districts their percentage is between 35 and 50. Districts with moderate prevalence of anaemia among children are situated mainly in central part of the state.

Data on anaemia levels are available for about 931 adolescent girls aged 10-19 years who constituted 25 percent of the sample. Table 4.2.3 depicts anaemia level for adolescent girls aged 10-19 years by selected background characteristics. In Arunachal Pradesh, overall, 78 percent of adolescent girls have any anaemia. Twenty two percent of them are mildly anaemic, 46 percent are moderately anaemic and 10 percent are experiencing severe anaemia. It has been found except moderate anaemia, the percentage of girls in remaining three categories of anaemia, even by its degree, diminish gradually with the increase in age from 10-14 to 15-19. No differential exists in the occurrence of any anaemia and mild anaemia by place of residence. However, moderate anaemia is

higher in rural areas and severe anaemia in urban areas. Anaemia among adolescent girls increases with the increase in educational attainment from 74 percent among non-literate adolescent girls to 80 percent among those who have completed ten or more years of education. The highest levels of anaemia are evident among Christian adolescent girls. However, adolescent girls belonging to other religious communities are also showing higher percentages of anaemia compared to the state average. Adolescent girls belonging to other backward classes are also more likely to suffer from any anaemia. It is interesting to note that adolescent girls from households with medium and higher standard of living are slightly more likely to be anaemic.

Of the 7 districts in the state, in 1 district the percentage of adolescent girls with severe or moderate anaemia is in less than 50, in 6 districts their percentage is between 50 and 75. Districts with moderate prevalence of anaemia among adolescent girls are situated mainly in southern part of the state.

Haemoglobin levels were measured for 176 pregnant women aged 15-44 years who constituted 48 percent of the sample. Table 4.2.4 shows the anaemia status by its degree among pregnant women according some selected background characteristics. Around 33 percent of the pregnant women in Arunachal Pradesh are suffering from some sort of anaemia. Among pregnant women, 26 percent women who are suffering from mild anaemia, 4 percent who are suffering from moderate anaemia and 3 percent who are suffering from severe anaemia. Thus, although levels of any anaemia among pregnant women and adolescent girls are about the same, the prevalence of severe anaemia is substantially higher in adolescent girls (10 percent) than in pregnant women (3 percent). This may be because more stringent cut-off level for severe anaemia has been used in the case of adolescent girls (8 g/dl) than in the case of pregnant women (5 g/dl). Table 4.2.4 clearly shows that percentage of women with any anaemia rises steadily with the increase in the age of the pregnant women from 24 percent for the age group 20-24 to 42 percent in the age group 30-34. Women residing in rural areas are slightly more likely (37 percent) to experience any anaemia compared to their urban counterparts (22 percent). Similarly, the prevalence of anaemia decreases steadily with the higher level of educational attainment of the pregnant women. While 37 percent of the non-literate women are anaemic, the prevalence of the same is 27 percent among those who have completed nine years of education. The level of anemia shows some variation with religion of the pregnant women. Pregnant women among scheduled tribes are more likely to be anaemic (37 percent) among all the categories. As expected, standard of living is negatively associated with the anaemia status of the pregnant women. Around 38 percent pregnant women belonging to poor families are anaemic compared to 15 percent among women belonging to households with higher standard of living.

Table 4.2.2 ANAEMIA AMONG CHILDREN

Percentage of children (age 0-71 months) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Arunachal Pradesh, 2002-04

Background characteristic	Parentage of children with any anaemia	Percentage of children with			Number of children
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age of child (in months)					
0-5	50.7	23.5	26.9	0.3	146
6-11	56.1	23.6	29.5	2.9	193
12-23	59.1	26.3	30.9	1.8	409
24-47	55.5	27.1	27.0	1.4	803
48-71	52.9	24.7	27.1	1.1	783
Birth order					
1	54.6	24.2	29.3	1.2	415
2-3	53.1	25.5	26.7	0.9	1,234
4-5	59.6	27.3	29.6	2.7	482
6+	56.7	26.9	27.4	2.4	158
Mother's not interviewed	(55.0)	(22.5)	(32.5)	(0.0)	46
Sex of the child					
Male	54.2	24.8	27.9	1.5	1,176
Female	55.8	26.5	28.0	1.3	1,158
Weight for age of children					
Normal	54.8	25.4	28.4	1.0	1,843
Below -2 SD[1]	55.6	26.5	26.0	3.1	491
Below -3 SD	48.1	16.2	31.8	0.0	83
Residence					
Rural	53.8	26.5	25.9	1.4	1,655
Urban	58.0	23.6	32.8	1.6	680
Mother's education					
Non-literate	55.1	27.7	25.7	1.7	1,260
0-9@years	54.7	23.6	29.9	1.2	699
10 years & above	55.3	25.6	29.1	0.6	300
Mother's not interviewed	55.0	10.0	42.5	2.5	74
Religion					
Hindu	55.5	25.8	28.5	1.1	900
Muslim	59.1	31.1	25.6	2.4	78
Christian	54.5	22.8	29.0	2.7	409
Buddhist	56.5	28.4	25.4	2.7	283
No Religion	36.3	18.7	14.4	3.2	57
Other	55.1	26.0	29.0	0.2	607
Caste/tribe#					
Scheduled caste	58.1	28.2	28.6		
Scheduled tribe	54.3	25.0	27.9	1.4	206
Other backward class	53.4	27.9	24.4	1.4	1,525
Other	57.6	27.1	29.0	1.2	160
				1.5	380
Standard of living index					
Low	53.1	24.2	27.3	1.6	1,285
Medium	57.5	27.5	28.3	1.8	702
High	56.7	27.1	29.6	0.0	347
Total	55.0	25.6	27.9	1.4	2,334

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. [1] Includes children who are below – 3 SD from the International Reference median. @ Literate mothers with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. Total includes 44 cases with missing information on birth order that were not shown separately. ( ) Based on less than 50 unweighted cases.

Table 4.2.3 ANAEMIA AMONG ADOLESCENT GIRLS

Percentage of adolescent girls[1] (age 10-19 years) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Arunachal Pradesh, 2002-04

Background characteristic	Parentage of adolescent with any anaemia	Percentage of adolescent with			Number of adolescent girls
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
10-14	78.2	23.7	44.2	10.3	631
15-19	77.8	18.0	50.0	9.8	300
Marital status					
Currently not married	78.1	21.9	46.1	10.1	931
Residence					
Rural	78.2	21.9	48.4	7.9	660
Urban	77.9	22.0	40.4	15.5	271
Education					
Non-literate	74.0	19.2	43.7	11.2	148
0-9@years	78.8	22.7	46.7	9.4	695
10 years & above	79.5	19.7	45.5	14.3	89
Religion					
Hindu	75.6	24.2	40.4	11.0	362
Christian	86.0	20.4	55.9	9.8	131
Buddhist	70.4	16.5	48.1	5.8	102
Other	80.0	21.6	47.8	10.6	336
Caste/tribe#					
Scheduled caste	68.9	21.9	40.6	6.3	70
Scheduled tribe	79.0	21.3	46.9	10.8	599
Other backward class	83.3	20.4	58.5	4.4	83
Other	77.7	23.7	40.2	13.8	142
Standard of living index					
Low	76.0	19.0	47.8	9.2	395
Medium	80.0	24.1	46.8	9.1	331
High	79.0	23.8	41.6	13.5	205
Total	78.1	21.9	46.1	10.1	931

Note: Haemoglobin level between 10.0 - 11.9 g/dl is mild anaemia, 8.0 - 9.9 g/dl is moderate anaemia and below 8.0 g/dl is severe anaemia. [1] Includes currently married women age 15-19 years who were not pregnant at the time of survey. @ Literate adolescent with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases.

Table 4.2.4 ANAEMIA AMONG PREGNANT WOMEN

Percentage of pregnant women (age 15-44 years) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Arunachal Pradesh, 2002-04

Background characteristic	Parentage of pregnant women with any anaemia	Percentage of pregnant women with			Number of pregnant women
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
20-24	23.8	21.6	1.0	1.1	61
25-29	(45.1)	(35.3)	(5.9)	(3.9)	45
30-34	(41.9)	(29.0)	(9.7)	(3.2)	27
Residence					
Rural	36.5	31.2	1.7	3.5	131
Urban	(22.0)	(12.0)	(10.0)	(0.0)	45
Education					
Non-literate	37.0	30.8	3.8	2.4	89
0-9@years	26.7	16.7	6.2	3.8	66
Religion					
Hindu	30.9	23.8	7.0	0.0	58
Other	34.4	27.6	2.9	3.9	118
Caste/tribe#					
Scheduled tribe	36.9	31.5	1.6	3.7	123
Other	(20.7)	(17.2)	(3.4)	(0.0)	29
Standard of living index					
Low	37.6	29.7	3.8	4.1	112
Medium	(35.9)	(28.2)	(7.7)	(0.0)	37
High	(14.8)	(11.1)	(3.7)	(0.0)	26
Total	33.2	26.4	4.2	2.6	176

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. @ Literate women with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. ( ) Based on less than 50 unweighted cases. Total includes 23,12 & 7 cases in age group category 15-19, 35-39 & 40-44, 22 cases in education category 10 and above and 14,3 & 5 cases in Scheduled caste, Other Backward Class & don't know caste that were not shown separately.

4.3 ASSAM

4.3.1 Weight for Age of Children:

In Assam, weight was measured for 79 percent of children under 6 years of age in sampled households. On the whole, data on weight are available for nearly 5 thousand children in the state. Table 4.3.1 depicts the percentage of children under 6 years of age classified as undernourished, as measured by weight for age index by some selected background characteristics. In the following discussion, children whose weights in SD unit (Z score) is less than –3 would be referred to as 'severely underweight' and those with weight in SD unit less than –2 would be referred to simply as 'underweight'. More than one-tenth (15 percent) of the children in Assam are severely underweight and nearly one-third (32 percent) of the children are underweight. The proportion of undernourished children increases rapidly with the child's age upto 12-23 months and shows a decrease thereafter. More than one-fourth (27 percent) of the children in the age group 12-23 months are severely underweight whereas more than two-fifth (41 percent) of the children in the same age group are underweight. By the age 48-71 months the corresponding figures for severely underweight and underweight children stabilize at 9 and 29 percent, respectively.

Birth order of the child can also influence the nutritional status of the child to a great extent. The second round of RCH survey reveals that young children in families with six or more siblings are most likely to be underweight. Whereas 16 and 32 percent of children of first birth order are severely underweight and underweight respectively, the corresponding figures among children of birth order six or more are 19 and 36 percent respectively. The observed sex differential both in severe underweight and underweight is quite pronounced. The extent of underweight children, both severe underweight and underweight, is higher in rural areas compared to that in urban areas. While around 11 and 28 percent children in urban areas are severely underweight and underweight, the corresponding figures for rural areas are 16 and 33 percent respectively.

Children's nutritional status is also expected to be influenced by mother's educational attainment. Children whose mothers are non-literate are more likely to be severely underweight as compared to children whose mothers have ten or more years of schooling. In the case of underweight children also, the contribution of non-literate mothers is substantially higher compared to that of mothers with some education, that is, upto 9 years as well as mothers with ten or more years of schooling.

The results of the RCH survey show that Muslim children tend to be twice more likely underweight than Hindu children. The percentage of underweight children among Muslims and Hindus is respectively 49 and 26 percent. Children from other castes have the highest percentage of both severely underweight and underweight cases (19 and 38 percent, respectively), whereas children belonging to the 'scheduled caste' are relatively better off than others. As expected, household's standard of living index (SLI) is strongly correlated with the malnourishment of children as reflected through the weight for age anthropometric measure.

Table 4.3.1 WEIGHT FOR AGE OF CHILDREN

Percentage of children (age 0-71 months) classified as undernourished by weight for age anthropometric matrix of nutritional status according to some selected background characteristics, Assam, 2002-04

Background characteristic	Weight for age		Number of children
	Percentage Below – 3 SD	Percentage Below – 2 SD[1]	
Age of child (in months)			
0-5	8.1	15.6	132
6-11	17.9	40.3	277
12-23	27.0	40.8	710
24-47	17.0	32.3	1,598
48-71	9.1	29.1	2,048
Birth order			
1	15.9	31.6	1,358
2-3	14.9	32.3	1,970
4-5	14.2	33.7	747
6+	18.7	36.2	309
Mother's not interviewed	9.8	27.8	381
Sex of the child			
Male	17.1	36.2	2,508
Female	12.5	27.7	2,257
Residence			
Rural	15.8	33.2	3,891
Urban	10.9	27.7	874
Mother's education			
Non-literate	16.9	35.2	1,693
0-9@years	15.4	32.5	1,974
10 years & above	11.1	26.5	707
Mother's not interviewed	10.4	27.9	391
Religion			
Hindu	11.1	26.2	3,065
Muslim	22.7	44.8	1,546
Christian	12.7	26.4	124
Other	(10.5)	(21.1)	29
Caste/tribe#			
Scheduled caste	9.1	28.1	670
Scheduled tribe	11.3	21.5	585
Other backward class	12.7	27.4	953
Other	18.6	38.1	2,405
Standard of living index			
Low	16.2	34.7	3,024
Medium	11.9	27.2	1,038
High	13.8	28.9	701
Total	14.9	32.2	4,765

Note: This index is expressed in standard deviation units (SD) from the median of the International Reference Population. [1]Includes children who are below – 3 SD from the International Reference Population median. @ Literate mothers with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. Total includes 11 cases with missing information on birth order and 3 cases in mother's education and 2 cases in standard of living index that were not shown separately. () Based on less than 50 unweighted cases.

More than one tenth (16 percent) of the children belonging to households of lower standard of living are severely underweight and around one-third of the children in the same category are underweight. Whereas the corresponding figures for children belonging to high standard of living households are 14 and 29 percent, respectively.

Of the 12 districts in the state, in 6 districts the percentage of underweight children in less than 30, in 5 districts their percentage is between 30 and 50, and in 1 district their percentage is more than 50. West and central parts of the state shows high prevalence of underweight children.

4.3.2 Anaemia among Children, Adolescent Girls, and Pregnant Women

In Assam, haemoglobin level was measured for 44 percent of children under 6 years of age in sampled households. On the whole, the data on haemoglobin level are available for over1 thousand children in the state. Table 4.3.2 shows the percent of children aged 0-71 months classified by the degree of anaemia and by selected background characteristics. Overall, nearly 96 percent of the children have some level of anaemia, with 46 percent who are mildly anaemic, 43 percent who are moderately anaemic and 7 percent who are severely anaemic. Certain background characteristics of children show strong association with the level of anaemia. Some of them are: children aged 12-23 months (97 percent), children of higher birth order, more specifically, children of order six or more (96 percent), male children (96 percent), children who are severely underweight (97 percent), children from rural areas (74 percent), children of non-literate mothers (75 percent), Muslim children (97 percent), children of schedule castes (96 percent) and children belonging to households characterized by low standard of living (95 percent). But even in the socio-economic groups with the lowest level of anaemia, more than ninety percent of children are anaemic. On the other hand, in no socio-economic group the prevalence of severe anaemia is more than seven percent.

Of the 12 districts in the state, in 3 districts the percentage of children with severe or moderate anaemia is in less than 35, in 4 districts their percentage is between 35 and 50, and in 5 districts their percentage is more than 50. Districts with high prevalence of anaemia among children are situated mainly in east and northern part of the state.

Data on anaemia levels are available for nearly 2 thousand adolescent girls aged 10-19 years who constituted 38 percent of the sample. Table 4.3.3 shows anaemia levels for adolescent girls aged 10-19 years by selected background characteristics. In Assam, 97 percent of adolescent girls have any anaemia. Sixteen percent of them are mildly anaemic, 41 percent are moderately anaemic and 40 percent are having severe anaemia. It has been found from the survey results that except mild anaemia, the percentage of girls in the remaining three categories of anaemia diminishes with the increase in age from 10-14 to 15-19 years. Except severe anaemia, the incidence of anaemia in other three categories is higher among adolescent girls who are currently married compared to that among their unmarried counterparts. Except mild and severe anaemia the occurrence of anaemia in all other categories is found to be higher in urban areas than in rural areas.

Anaemia among adolescent girls increases with the increase in educational attainment from 90 percent among non-literate adolescent girls to 99 percent among those who have completed ten or more years of education. The level of anaemia is higher among Hindu adolescent girls (98 percent). Adolescent girls from other backward classes are more prone to suffer from any anaemia. It is also interesting to note that adolescent girls from households with medium standard of living are slightly more likely to be anaemic.

Of the 12 districts in the state, in 1district the percentage of adolescent girls with severe or moderate anaemia is in less than 50, in 3 districts their percentage is between 50 and 75, and in 8 districts their percentage is more than 75. Districts with high prevalence of anaemia among adolescent girls are situated mainly in east and western part of the state.

Haemoglobin levels were measured for more than 100 pregnant women aged 15-44 years who constituted 34 percent of the sample. Table 4.3.4 shows the anaemia status by its degree among pregnant women according some selected background characteristics. Around 97 percent of the pregnant women in the Assam are suffering from some anaemia. Among pregnant women 31 percent have mild anaemia, 59 percent who have moderate anaemia and 8 percent who have severe anaemia. Thus, although levels of any anaemia among pregnant women and adolescent girls are about the same, the prevalence of severe anaemia is substantially higher in adolescent girls (40 percent) than in pregnant women (8 percent). This may be because more stringent cut-off level for severe anaemia has been used in the case of adolescent girls (8 g/dl) than in the case of pregnant women (5 g/dl). Table 4.2.4 clearly shows that percentage of pregnant women with any anaemia rises first and then decreases with the increase in the age of the pregnant women from 92 percent for the age group 20-24 to 87 percent in the age group 30-34. The prevalence of anaemia decreases marginally with the level of educational attainment of the pregnant women. While 98 percent of the non-literate women are anaemic, the prevalence of the same is 95 percent among those who have completed ten or more years of education. The level of anemia shows some variation with religion of the pregnant women. Pregnant women among scheduled castes are more prone to be anaemic (100 percent) among all the categories. As expected, standard of living is negatively associated with the anaemia status of the pregnant women. But the effect is very marginal. Around 98 percent pregnant women belonging to poor families are anaemic compared to 93 percent among women belonging to households with higher standard of living.

Table 4.3.2 ANAEMIA AMONG CHILDREN

Percentage of children (age 0-71 months) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Assam, 2002-04

Background characteristic	Parentage of children with any anaemia	Percentage of children with			Number of children
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age of child (in months)					
0-5	(100.0)	(45.5)	(54.5)	(0.0)	29
6-11	98.1	26.0	61.8	10.3	78
12-23	96.7	38.7	52.7	5.4	277
24-47	95.3	46.3	41.8	7.2	621
48-71	95.2	49.6	38.2	7.5	844
Birth order					
1	95.1	47.6	40.4	7.1	511
2-3	95.8	43.4	46.2	6.2	741
4-5	96.9	41.0	45.5	10.4	270
6+	95.5	53.4	38.4	3.7	163
Mother's not interviewed	95.2	50.3	36.2	8.7	164
Sex of the child					
Male	96.1	47.6	40.7	7.9	964
Female	95.2	43.7	45.4	6.2	885
Weight for age of children					
Normal	95.0	46.1	41.0	7.9	1,397
Below – 2 SD[1]	97.9	44.5	48.8	4.5	452
Below – 3 SD	97.3	41.8	50.7	4.8	162
Residence					
Rural	96.5	44.2	43.9	8.3	1,526
Urban	92.0	52.9	38.0	1.1	323
Mother's education					
Non-literate	95.7	42.6	45.1	8.0	693
0-9@years	95.9	45.4	43.6	6.9	772
10 years & above	96.1	52.9	40.5	2.6	218
Mother's not interviewed	94.0	50.9	33.4	9.8	166
Religion					
Hindu	95.5	41.9	43.4	10.2	1,171
Muslim	96.4	52.9	41.8	1.7	616
Christian	94.2	44.6	48.2	1.4	50
Caste/tribe#					
Scheduled caste	95.8	41.9	41.3	12.6	355
Scheduled tribe	96.2	36.1	50.8	9.2	214
Other backward class	93.4	42.8	41.8	8.7	305
Other	96.2	50.4	42.2	3.7	902
Standard of living index					
Low	95.4	42.2	45.3	7.9	1,256
Medium	96.8	51.2	39.4	6.2	373
High	95.7	56.3	35.5	4.0	221
Total	95.7	45.7	42.9	7.1	1,849

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. [1] Includes children who are below – 3 SD from the International Reference median. @ Literate mothers with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. ( ) Based on less than 50 unweighted cases. Total includes 12 cases in other religions that were not shown separately.

Table 4.3.3 ANAEMIA AMONG ADOLESCENT GIRLS

Percentage of adolescent girls[1] (age 10-19 years) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Assam, 2002-04

Background characteristic	Parentage of adolescent with any anaemia	Percentage of adolescent with			Number of adolescent girls
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
10-14	96.2	14.3	41.1	40.7	1,126
15-19	97.0	17.8	39.6	39.6	757
Marital status					
Currently married	(97.7)	(27.3)	(43.2)	(27.3)	45
Currently not married	96.5	15.5	40.5	40.5	1,837
Residence					
Rural	96.3	16.2	39.0	41.1	1,453
Urban	97.2	13.9	45.8	37.5	429
Education					
Non-literate	90.4	17.0	34.3	39.1	183
0-9@years	97.0	15.6	41.3	40.1	1,556
10 years & above	98.8	15.2	40.3	43.3	145
Religion					
Hindu	97.6	13.7	38.5	45.4	1347
Muslim	93.7	21.6	46.6	25.5	474
Other	95.1	15.4	36.9	42.7	61
Caste/tribe#					
Scheduled caste	98.5	14.6	49.1	34.8	306
Scheduled tribe	95.4	10.8	29.7	54.9	245
Other backward class	96.8	15.6	41.4	39.8	397
Other	95.9	17.7	40.6	37.7	912
Standard of living index					
Low	95.3	17.7	42.5	35.2	1,043
Medium	99.2	13.8	37.7	47.7	471
High	96.4	12.6	38.7	45.2	369
Total	96.5	15.7	40.5	40.3	1,883

Note: Haemoglobin level between 10.0 - 11.9 g/dl is mild anaemia, 8.0 - 9.9 g/dl is moderate anaemia and below 8.0 g/dl is severe anaemia. [1] Includes currently married women age 15-19 years who were not pregnant at the time of survey. @ Literate adolescent with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. ( ) Based on less than 50 unweighted cases.

Table 4.3.4 ANAEMIA AMONG PREGNANT WOMEN

Percentage of pregnant women (age 15-44 years) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Assam, 2002-04

Background characteristic	Parentage of pregnant women with any anaemia	Percentage of pregnant women with			Number of pregnant women
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
20-24	(91.7)	(41.7)	(41.7)	(8.3)	40
25-29	99.9	39.8	56.9	3.2	71
30-34	(87.1)	(38.7)	(45.2)	(3.2)	25
Residence					
Rural	96.7	31.0	57.7	8.0	146
Education					
Non-literate	97.5	18.4	67.5	11.6	54
0-9@years	96.5	38.5	55.5	2.5	82
10 years & above	(94.7)	(55.3)	(36.8)	(2.6)	29
Religion					
Hindu	98.3	23.2	64.6	10.6	121
Other	(90.2)	(62.3)	(27.9)	(0.0)	44
Caste/tribe#					
Scheduled caste	(100.0)	(29.2)	(62.5)	(8.3)	30
Other backward class	(96.3)	(37.0)	(51.9)	(7.4)	48
Other	97.6	37.5	58.7	1.4	65
Standard of living index					
Low	97.6	27.7	58.7	11.2	104
Medium	(92.7)	(51.2)	(41.5)	(0.0)	33
High	(93.1)	(48.3)	(41.4)	(3.4)	28
Total	97.0	30.7	58.6	7.8	165

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. @ Literate women with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. ( ) Based on less than 50 unweighted cases. Total includes 16, 3 & 9 cases in age group category 15-19,35-39 & 40-44, 19 cases in Urban resident and 20 & 2 cases in ST & don't know caste that were not shown separately.

4.4 BIHAR

4.4.1 Weight for Age of Children

In Bihar, weight was measured for 64 percent of children under 6 years of age in sampled households. On the whole, data on weight are available for near 26 thousand children in the state. Table 4.4.1 shows the percentage of children under 6 years of age classified as undernourished as measured by weight for age index by some selected background characteristics. In the following discussion, children whose weights in SD unit (Z score) is less than –3 would be referred to as 'severely underweight' and those with weights in SD unit less than –2 would be referred to simply as 'underweight'. More than one-fifth (24 percent) of the children in Bihar are severely underweight and more than half (55 percent) of the children are underweight. The proportion of undernourished children increases rapidly with the child's age upto12-23 months and shows a decrease thereafter. Around one-third (33 percent) of the children in the age group 12-23 months are severely underweight whereas more than three-fifth (64 percent) of the children in the same age group are underweight. By age 48-71 months the corresponding figures for severely underweight and underweight children stabilize at 20 and 56 percent, respectively.

Birth order of the child can also influence the nutritional status of the child. The second round of the RCH survey reveals that young children in families with six or more siblings are most likely to be underweight. Whereas 20 and 52 percent of children of first birth order are severely underweight and underweight respectively, the corresponding figures among children of birth order six or more are 31 and 62 percent, respectively. The observed sex differential both in severe underweight and underweight children is marginal. The extent of underweight children, both severe underweight and underweight, is higher in rural areas compared to that in urban areas. While around 21 and 50 percent children in urban areas are severely underweight and underweight, the corresponding figures for rural areas are 25 and 56 percent respectively.

Children's nutritional status is also expected to be influenced by mother's educational attainment. Children whose mothers are non-literate are about more than twice as likely to be severely underweight as compared to children whose mothers have ten or more years of schooling. A similar pattern is also found in the case of underweight children. Their percentage is 61 among children of non-literate mothers while it is 36 percent among children of mothers with ten or more years of schooling.

The results of the RCH survey show that Muslim children tend to be slightly more underweight than Hindu children. The percentage of underweight children among Hindus and Muslim is respectively 54 and 57 percent. Children from scheduled castes have the highest percentage of both severely underweight and underweight cases (28 and 61 percent, respectively), whereas children belonging to the 'other castes' category are relatively better off than others.

Table 4.4.1 WEIGHT FOR AGE OF CHILDREN

Percentage of children (age 0-71 months) classified as undernourished by weight for age anthropometric measure of nutritional status according to some selected background characteristics, Bihar, 2002-04

Background characteristic	Weight for age		Weighted number of children
	Percentage Below – 3 SD	Percentage Below – 2 SD[1]	
Age of child (in months)			
0-5	3.6	11.3	2,316
6-11	21.1	45.8	1,732
12-23	32.6	64.2	4,034
24-47	29.1	61.9	8,688
48-71	19.6	56.1	8,736
Birth order			
1	19.9	51.5	5,417
2-3	21.7	52.9	9,521
4-5	27.0	58.5	5,366
6+	30.7	61.5	3,381
Mother's not interviewed	20.4	48.1	1,821
Sex of the child			
Male	22.2	53.9	13,082
Female	24.9	55.3	12,423
Residence			
Rural	24.4	56.1	19,421
Urban	20.8	49.9	6,085
Mother's education			
Non-literate	27.9	60.7	15,612
0-9@years	17.3	48.4	4,782
10 years & above	12.3	36.1	2,995
Mother's not interviewed	21.1	49.4	2,117
Religion			
Hindu	23.1	54.1	21,392
Muslim	25.8	57.4	4,060
Others	16.6	44.9	54
Caste/tribe#			
Scheduled caste	28.4	60.6	5,175
Scheduled tribe	26.2	60.0	402
Other backward class	23.9	55.9	14,792
Others	17.1	44.1	5,080
Standard of living index			
Low	27.0	59.5	17,647
Medium	17.5	47.6	5,356
High	12.1	34.8	2,498
Total	23.5	54.6	25,506

Note: This index is expressed in standard deviation units (SD) from the median of the International Reference Population. [1]Includes children who are below – 3 SD from the International Reference Population median. Total includes 54 cases with missing information on birth order and 18 cases in mother's education and 4 cases in standard of living were not shown separately. @ Literate mothers with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. Total includes 4 cases with missing information in caste and 4 cases in standard of living that were not shown separately.

As expected, household's standard of living index (SLI) is strongly correlated with the malnourishment of children as reflected through the weight for age anthropometric measure. More than one-fourth (27 percent) of the children belonging to households of lower standard of living are severely underweight and around three-fifth of the children in the same category are underweight. Whereas the corresponding figures for children belonging to high standard of living households are 12 and 35 percent, respectively.

Of the 37 districts in the state, in 8 districts their percentage is between 30 and 50, and in 29 districts their percentage is more than 50. Most parts of the state shows high prevalence of underweight children.

4.4.2 Anaemia among Children, Adolescent Girls, and Pregnant Women

In Bihar, haemoglobin level was measured for 47 percent of children under 6 years of age in sampled households. On the whole, the data on haemoglobin level are available for over 15 thousand children in the state. Table 4.4.2 shows the percent of children aged 0-71 months classified by the degree of anaemia and by selected background characteristics. Overall, 98 percent of the children have some level of anaemia, with 49 percent who are mildly anaemic, 47 percent who are moderately anaemic and 3 percent who are severely anaemic. Certain background characteristics of children show strong association with the level of anaemia. Some of them are: children aged 6-11 months (99 percent), children of higher birth order, more specifically, children of order six or more (98 percent), female children (98 percent), children who are severely underweight (98 percent), children from rural areas (98 percent), children of non-literate mothers (98 percent), Hindu children (98 percent), children of schedule castes (98 percent) and children belonging to households characterized by low standard of living (98 percent). But even in the socio-economic groups with the lowest level of anaemia, over two-thirds of children are anaemic. On the other hand, in no socio-economic group the prevalence of severe anaemia is more than three percent.

Of the 37 districts in the state, in 7 districts the percentage of children with severe or moderate anaemia is in less than 35, in 11 districts their percentage is between 35 and 50, and in 19 districts their percentage is more than 50. Districts with high prevalence of anaemia among children are situated mainly in north and eastern parts of the state.

Data on anaemia levels are available for over 9 thousand adolescent girls aged 10-19 years who constituted 40 percent of the sample. Table 4.4.3 shows anaemia levels for adolescent girls by selected background characteristics. In Bihar, 99 percent of adolescent girls have any anaemia. Nineteen percent of them are mildly anaemic, 53 percent are moderately anaemic and 28 percent are having severe anaemia. It has been found from the survey results that except mild and moderate anaemia, the percentage of girls in the remaining two categories of anaemia marginally with the increase in age from 10-14 to 15-19 years. Except severe and any anaemia, the occurrence of anaemia in the other categories is found to be higher in urban areas than in rural areas. The prevalence of anaemia does not vary much with the educational attainment of girls. The level of anaemia is higher among Hindu adolescent girls (99 percent). Adolescent girls from 'scheduled tribe' are more likely to suffer from any anaemia.

Of the 37 districts in the state, in 14 districts their percentage is between 50 and 75. and in 23 districts their percentage is more than 75. Districts with high prevalence of anaemia among adolescent girls are situated mainly in north and southern parts of the state.

Haemoglobin levels were measured for nearly 2,000 pregnant women aged 15-44 years who constituted 55 percent of the sample. Table 4.4.4 shows the anaemia status among pregnant women according some selected background characteristics. Around 97 percent of the pregnant women in Bihar are suffering from some anaemia. Among pregnant women, 97 percent have mild anaemia, 40 percent who have moderate anaemia and two percent have severe anaemia. Thus, although levels of any anaemia among pregnant women and adolescent girls are about the same, the prevalence of severe anaemia is substantially higher in adolescent girls (28 percent) than in pregnant women (2 percent). This may be because more stringent cut-off level for severe anaemia has been used in the case of adolescent girls (8 g/dl) than in the case of pregnant women (5 g/dl). Table 4.2.4 clearly shows that percentage of pregnant women with any anaemia rises steadily with the increase in the age of the pregnant women from 67 percent for the age group 15-19 to 72 percent in the age group 35-39. Women, whether from rural or urban areas, are equally likely to experience any anaemia. The prevalence of anaemia decreases marginally with the level of educational attainment of the pregnant women. The level of anemia does not show variation with religion of the pregnant women. Pregnant women among scheduled castes are more prone to be anaemic (77 percent) among all the caste/tribe categories. As expected, standard of living is negatively associated with the anaemia status of the pregnant women. But the effect is very marginal. Around 70 percent pregnant women belonging to poor families are anaemic compared to 69 percent among women belonging to households with higher standard of living.

Table 4.4.2 ANAEMIA AMONG CHILDREN

Percentage of children (age 0-71 months) classified as having iron-deficiency anaemia by degree of anaemia and by selected background characteristics, Bihar, 2002-04

Background characteristic	Parentage of children with any anaemia	Percentage of children with			Weighted number of children
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age of child (in months)					
0-5	98.5	42.1	53.7	2.6	1,142
6-11	98.7	37.5	57.3	4.0	866
12-23	98.5	38.4	56.7	3.3	2,459
24-47	97.8	46.2	48.7	2.9	5,469
48-71	96.8	57.8	37.5	1.6	5,863
Birth order					
1	97.2	51.0	44.4	1.8	3,326
2-3	97.4	47.9	47.2	2.2	5,915
4-5	97.9	46.7	48.2	2.9	3,293
6+	98.3	47.4	47.4	3.5	2,008
Mother's not interviewed	98.3	51.2	44.0	3.1	1,256
Sex of the child					
Male	97.5	50.4	45.0	2.1	8,071
Female	97.8	46.4	48.4	3.0	7,622
Weight for age of children					
Normal	97.6	53.0	42.7	1.9	7,419
Below – 2 SD[1]	97.7	44.6	50.1	3.1	8,378
Below – 3 SD	98.2	39.6	54.3	4.3	3,533
Residence					
Rural	97.9	47.9	47.4	2.6	11,878
Urban	96.9	50.5	44.2	2.2	3,919
Mother's education					
Non-literate	98.0	45.3	49.7	3.0	9,259
0-9@years	97.2	50.9	44.5	1.9	3,178
10 years & above	96.2	59.4	35.8	1.0	1,955
Mother's not interviewed	98.4	49.2	46.1	3.1	1,406
Religion					
Hindu	97.8	48.4	46.9	2.6	13,448
Muslim	96.5	49.0	45.3	2.2	2,310
Others	(100.0)	(57.5)	(35.0)	(7.5)	39
Caste/tribe#					
Scheduled caste	98.0	43.9	51.4	2.7	3,146
Scheduled tribe	96.5	40.6	52.6	3.2	260
Other backward class	97.9	48.8	46.5	2.7	9,082
Others	96.6	52.6	42.1	1.9	3,280
Standard of living index					
Low	98.0	45.3	49.7	3.0	10,702
Medium	96.9	52.9	42.3	1.6	3,450
High	96.7	60.1	35.4	1.2	1,642
Total	97.6	48.5	46.6	2.5	15,797

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. [1] Includes children who are below – 3 SD from the International Reference median. Total includes 54, 104, 10 cases with missing information on birth order, sex of child, mother's education respectively and 4 cases in standard of living index that were not shown separately. @ Literate mothers with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases ( ) Based on less than 50 unweighted cases.

Table 4.4.3 ANAEMIA AMONG ADOLESCENT GIRLS

Percentage of adolescent girls[1] (age 10-19 years) classified as having iron-deficiency anaemia by degree of anaemia and by selected background characteristics, Bihar, 2002-04

Background characteristic	Parentage of adolescent with any anaemia	Percentage of adolescent with			Number of adolescent girls
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
10-14	99.3	18.4	52.5	28.4	5,798
15-19	98.9	20.1	52.5	26.3	3,796
Marital status					
Currently married	99.0	13.4	54.7	30.9	719
Currently not married	99.2	19.5	52.3	27.3	8,874
Residence					
Rural	99.3	18.5	51.6	29.2	6,517
Urban	98.9	20.3	54.4	24.2	3,077
Education					
Non-literate	99.4	16.0	51.5	32.0	2,956
0-9@years	99.2	19.9	53.4	25.9	5,680
10 years & above	97.9	23.8	50.2	24.0	958
Religion					
Hindu	99.2	18.2	53.4	27.6	8,053
Muslim	99.0	23.5	47.9	27.7	1,509
Others	(100.0)	(16.7)	(50.0)	(33.3)	30
Caste/tribe#					
Scheduled caste	98.8	15.6	50.7	32.5	1,565
Scheduled tribe	99.3	20.6	43.3	35.4	126
Other backward class	99.3	18.7	53.3	27.4	5,399
Others	99.0	22.1	52.3	24.6	2,490
Standard of living index					
Low	99.2	17.2	51.6	30.4	5,622
Medium	99.2	20.1	53.7	25.4	2,510
High	98.7	24.6	53.7	20.4	1,462
Total	99.1	19.1	52.5	27.6	9,594

Note: Haemoglobin level between 10.0 - 11.9 g/dl is mild anaemia, 8.0 - 9.9 g/dl is moderate anaemia and below 8.0 g/dl is severe anaemia. [1] Includes currently married women age 15-19 years who were not pregnant at the time of survey. @ Literate adolescent with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. In religion 2 cases of missing that were not shown separately. () Based on less than 50 unweighted cases.

Table 4.4.4 ANAEMIA AMONG PREGNANT WOMEN

Percentage of pregnant women (age 15-44 years) classified as having iron-deficiency anaemia by degree of anaemia and by selected background characteristics, Bihar, 2002-04

Background characteristic	Parentage of pregnant women with any anaemia	Percentage of pregnant women with			Number of pregnant women
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
15-19	97.9	56.0	41.2	0.7	445
20-24	96.2	53.4	39.7	3.1	731
25-29	97.2	57.3	38.0	2.0	417
30-34	97.5	51.3	42.9	3.2	205
35-39	100.0	55.9	41.9	2.3	79
Residence					
Rural	97.5	55.2	40.2	2.2	1,405
Urban	96.1	53.4	40.3	2.3	488
Education					
Non-literate	97.4	51.1	43.5	2.8	1,132
0-9@years	97.8	59.0	37.1	1.7	499
10 years & above	94.9	62.1	31.7	1.0	261
Religion					
Hindu	97.3	55.3	39.6	2.5	1,612
Muslim	96.2	51.4	44.0	0.7	281
Caste/tribe#					
Scheduled caste	99.0	47.0	49.1	2.9	391
Scheduled tribe	(94.6)	(29.7)	(59.5)	(5.4)	36
Other backward class	97.2	56.5	38.7	2.0	1,097
Others	95.3	60.4	33.1	1.9	367
Standard of living index					
Low	97.4	51.5	43.4	2.5	1,262
Medium	97.9	62.7	33.7	1.6	438
High	93.6	57.6	33.9	2.1	193
Total	97.1	54.7	40.2	2.2	1,893

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. @ Literate women with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. Total includes 17 cases in age group category 40-44, 1 case in other religion and 3 don't know cases in caste that were not shown separately. One missing case in education was not shown separately. ( ) Based on less than 50 unweighted cases.

4.5 CHHATISGARH

4.5.1 Weight for Age of Children:

In Chhatisgarh, weight was measured for 71 percent of children under 6 years of age in sampled households. On the whole, data on weight are available for nearly 8 thousand children in the state. Table 4.4.1 shows the percentage of children under 6 years of age classified as undernourished as measured by weight for age index by some selected background characteristics. In the following discussion, children whose weights in SD unit (Z score) is less than –3 would be referred to as 'severely underweight' and those with weight in SD unit less than –2 would be referred to simply as 'underweight'. Around one-fifth (19 percent) of the children in Chhatisgarh are severely underweight and less than half (47 percent) of the children are underweight. The proportion of undernourished children increases rapidly with the child's age upto 12-23 months and shows a decrease thereafter. Around one-third (36 percent) of the children in the age group 12-23 months are severely underweight whereas more than three-fifth (61 percent) of the children in the same age group are underweight. By age 48-71 months the corresponding figures for severely underweight and underweight children stabilize at 11 and 40 percent, respectively.

Birth order of the child can also influence the nutritional status of the child. The second round of the RCH survey reveals that young children in families with six or more siblings are most likely to be underweight. Whereas 18 and 48 percent of children of first birth order are severely underweight and underweight respectively, the corresponding figures among children of birth order six or more are 22 and 46 percent, respectively. The observed sex differential both in severe underweight and underweight children is marginal. The extent of underweight children, both severe underweight and underweight, is higher in rural areas compared to that in urban areas. While around 15 and 44 percent children in urban areas are severely underweight and underweight, the corresponding figures for rural areas are 21 and 49 percent respectively.

Children's nutritional status is also expected to be influenced by mother's educational attainment. Children whose mothers are non-literate are about more likely to be severely underweight as compared to children whose mothers have ten or more years of schooling. A similar pattern is also found in the case of underweight children. The percentage of underweight children is 51 among non-literate mothers while it is 39 among mothers with ten or more years of schooling.

The results of the RCH survey show that Hindu children tend to be slightly more underweight than Christian children. The percentage of underweight children among Hindus and Christians is respectively 48 and 36 percent. Children from schedule tribe have the highest percentage of severely underweight and underweight cases (22 percent), and children from other backward class have the highest percentage of underweight cases (50 percent), whereas children belonging to the 'other castes' category are relatively better off than others.

Table 4.5.1 WEIGHT FOR AGE OF CHILDREN

Percentage of children (age 0-71 months) classified as undernourished by weight for age anthropometric matrix of nutritional status according to some selected background characteristics, Chhatisgarh, 2002-04

Background characteristic	Weight for age		Number of children
	Percentage Below - 3 SD	Percentage Below - 2 SD[1]	
Age of child (in months)			
0-5	12.6	27.5	419
6-11	26.4	48.5	537
12-23	36.7	61.2	1,116
24-47	19.9	52.4	2,642
48-71	11.1	39.9	2,765
Birth order			
1	18.1	47.5	2,013
2-3	19.2	47.8	3,418
4-5	21.1	48.3	1,321
6+	22.1	46.1	382
Mother's not interviewed	15.5	41.1	345
Sex of the child			
Male	20.3	49.5	3,753
Female	18.1	45.3	3,726
Residence			
Rural	20.5	48.5	5,653
Urban	15.1	44.0	1,826
Mother's education			
Non-literate	21.7	50.5	3762
0-9@years	18.5	48.3	2094
10 years & above	14.5	38.5	858
Mother's not interviewed	14.1	40.1	765
Religion			
Hindu	19.5	47.8	7,192
Muslim	11.6	35.6	124
Christian	10.9	39.6	96
Other	17.0	39.8	67
Caste/tribe#			
Scheduled caste	16.9	44.6	1,199
Scheduled tribe	21.6	48.3	2,125
Other backward class	20.2	50.0	3,304
Other	11.7	38.1	745
Standard of living index			
Low	20.7	48.9	4,744
Medium	18.9	47.9	1,739
High	12.5	39.5	991
Total	19.2	47.4	7,479

Note: This index is expressed in standard deviation units (SD) from the median of the International Reference Population. [1]Includes children who are below - 3 SD from the International Reference Population median. @ Literate mothers with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. Total includes 30 cases with missing information on birth order and 9 cases in mother's education that were not shown separately.

As expected, household's standard of living index (SLI) is strongly correlated with the malnourishment of children as reflected through the weight for age anthropometric measure. More than one-fifth (21 percent) of the children belonging to households of lower standard of living are severely underweight and around half of the children in the same category are underweight. Whereas the corresponding figures for children belonging to high standard of living households are 13 and 40 percent, respectively.

Of the 16 districts in the state, in 2 districts the percentage of underweight children in less than 30, in 8 districts their percentage is between 30 and 50, and in 6 districts their percentage is more than 50. Western part of the state shows high prevalence of underweight children.

4.5.2 Anaemia among Children, Adolescent Girls, and Pregnant Women

In Chhatisgarh, haemoglobin level was measured for 65 percent of children under 6 years of age in sampled households. On the whole, the data on haemoglobin level are available for over 6 thousand children in the state. Table 4.4.2 shows the percent of children aged 0-71 months classified by the degree of anaemia and by selected background characteristics. Overall, 97 percent of the children have some level of anaemia, with 37 percent who are mildly anaemic, 56 percent who are moderately anaemic and 4 percent who are severely anaemic. Certain background characteristics of children show strong association with the level of anaemia. Some of them are: children aged 24-47 months (98 percent), children of higher birth order, more specifically, children of order six or more (97 percent), female children (97 percent), children who are severely underweight (98 percent), children from rural areas (97 percent), children of non-literate mothers (97 percent), Christian children (99 percent), children of schedule castes and scheduled tribe both (97 percent) and children belonging to households characterized by low standard of living (97 percent).

Of the 16 districts in the state, in 5 districts their percentage is between 35and 50, and in 11 districts their percentage is more than 50. Districts with high prevalence of anaemia among children are situated mainly in north and central parts of the state.

Data on anaemia levels are available for about 5 thousand adolescent girls aged 10-19 years who constituted 57 percent of the sample. Table 4.4.3 shows anaemia levels for adolescent girls by selected background characteristics. In Chhatisgarh, 99 percent of adolescent girls have any anaemia. Eleven percent of them are mildly anaemic, 40 percent are moderately anaemic and 48 percent are having severe anaemia. It has been found from the survey results that except mild anaemia, and moderate anaemia the percentage of anaemia among adolescent girls are same with increase in age from 10-14 and 15-19. The incidence of any anaemia is higher (100.0 percent) among adolescent girls who are currently married compared to that among their unmarried counterpart (99 percent). Except severe anaemia, the occurrence of anaemia in the other categories is found to be higher in urban areas compared to their rural counterparts.

The prevalence of anaemia does not vary much with the educational attainment of girls. The level of anaemia is higher among Muslim adolescent girls (100.0 percent). Adolescent girls from 'other caste' are more likely to suffer from any anaemia. The prevalence of anaemia does not vary much with the household's standard of living.

Of the 16 districts in the state, in 3 districts their percentage is between 50 and 75, and in 13 districts their percentage is more than 75. Districts with high prevalence of anaemia among adolescent girls are situated in most parts of the state.

Haemoglobin levels were measured for about 700 pregnant women aged 15-44 years who constituted 65 percent of the sample. Table 4.4.4 shows the anaemia status among pregnant women according some selected background characteristics. Around 98 percent of the pregnant women in Chhatisgarh are suffering from some anaemia. Among pregnant women, 36 percent have mild anaemia, 56 percent who have moderate anaemia and 5 percent have severe anaemia. Thus, although levels of any anaemia among pregnant women and adolescent girls are about the same, the prevalence of severe anaemia is substantially higher in adolescent girls (48 percent) than in pregnant women (5 percent). This may be because more stringent cut-off level for severe anaemia has been used in the case of adolescent girls (8 g/dl) than in the case of pregnant women (5 g/dl). Table 4.4.4 clearly shows that percentage of pregnant women with any anaemia rises steadily with the increase in the age of the pregnant women from 97 percent for the age group 15-19 to 98 percent in the age group 25-29. Women from rural areas are more likely to experience any anaemia. The prevalence of anaemia decreases marginally with the level of educational attainment of the pregnant women. . The level of anemia does not show variation with religion of the pregnant women. Pregnant women among schedule tribe are more prone to be anaemic (99 percent) among all the caste/tribe categories. As expected, standard of living is negatively associated with the anaemia status of the pregnant women. But the effect is very marginal. Around 98 percent pregnant women belonging to poor families are anaemic compared to 97 percent among women belonging to households with higher standard of living.

Table 4.5.2 ANAEMIA AMONG CHILDREN

Percentage of children (age 0-71 months) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Chhatisgarh, 2002-04

Background characteristic	Parentage of children with any anaemia	Percentage of children with			Number of children
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age of child (in months)					
0-5	95.2	37.9	53.4	3.9	554
6-11	96.3	29.7	62.0	4.5	464
12-23	97.0	34.3	57.8	4.9	1,107
24-47	97.6	37.0	56.8	3.9	2,382
48-71	96.7	40.4	52.4	3.9	2,422
Birth order					
1	96.7	39.6	53.3	3.8	1,992
2-3	96.9	37.4	55.6	4.0	3,057
4-5	97.0	34.4	57.8	4.8	1,206
6+	97.0	29.1	65.6	2.3	333
Mother's not interviewed	97.5	42.2	49.7	5.5	342
Sex of the child					
Male	97.1	37.3	56.1	3.7	3,486
Female	96.7	37.4	54.9	4.5	3,444
Weight for age of children					
Normal	96.1	39.6	52.9	3.6	3,855
Below – 2 SD[1]	97.9	34.5	58.8	4.7	3,075
Below – 3 SD	98.2	32.7	60.1	5.4	1,281
Residence					
Rural	97.1	35.1	57.6	4.4	5,345
Urban	96.3	44.7	48.5	3.2	1,585
Mother's education					
Non-literate	97.1	34.8	58.1	4.2	3,585
0-9@years	97.0	37.9	55.0	4.1	1,934
10 years & above	95.7	45.2	47.2	3.3	689
Mother's not interviewed	96.8	40.6	51.7	4.4	723
Religion					
Hindu	96.9	37.2	55.6	4.1	6,696
Muslim	95.5	35.1	56.9	3.4	98
Christian	99.0	43.7	53.3	2.0	82
Other	94.3	42.3	43.5	8.5	54
Caste/tribe#					
Scheduled caste	97.3	34.6	58.0	4.7	1,100
Scheduled tribe	97.3	32.2	59.6	5.4	1,990
Other backward class	97.0	39.1	54.7	3.3	3,151
Other	94.9	48.0	43.5	3.4	588
Standard of living index					
Low	97.1	35.2	57.3	4.6	4,501
Medium	96.8	37.9	55.6	3.3	1,619
High	96.1	47.8	45.2	3.1	810
Total	96.9	37.3	55.5	4.1	6,931

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. [1] Includes children who are below – 3 SD from the International Reference median. @ Literate mothers with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases.

Table 4.5.3 ANAEMIA AMONG ADOLESCENT GIRLS

Percentage of adolescent girls[1] (age 10-19 years) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Chhatisgarh, 2002-04

Background characteristic	Parentage of adolescent with any anaemia	Percentage of adolescent with			Number of adolescent girls
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
10-14	99.1	10.6	40.2	48.3	3,104
15-19	99.1	11.5	39.3	48.3	2,207
Marital status					
Currently married	100.0	5.9	40.4	53.7	334
Currently not married	99.0	11.3	39.8	47.9	4,977
Residence					
Rural	99.3	10.3	39.5	49.6	3,766
Urban	98.6	12.8	40.6	45.2	1,545
Education					
Non-literate	99.7	8.3	41.1	50.2	850
0-9@years	99.0	10.9	39.5	48.7	4,017
10 years & above	98.4	17.2	39.8	41.3	444
Religion					
Hindu	99.1	11.1	39.7	48.4	5,096
Muslim	100.0	9.0	41.9	49.1	121
Christian	100.0	9.3	39.5	51.2	69
Other	(96.8)	(9.7)	(48.4)	(38.7)	25
Caste/tribe#					
Scheduled caste	99.4	12.5	42.0	44.9	865
Scheduled tribe	99.4	9.1	36.0	54.2	1,313
Other backward class	99.3	10.3	41.5	47.5	2,504
Other	97.5	15.2	38.3	44.0	565
Standard of living index					
Low	99.4	10.1	38.6	50.7	3,140
Medium	99.2	10.1	42.2	46.9	1,356
High	97.8	15.8	40.4	41.6	815
Total	99.1	11.0	39.8	48.3	5,311

Note: Haemoglobin level between 10.0 - 11.9 g/dl is mild anaemia, 8.0 - 9.9 g/dl is moderate anaemia and below 8.0 g/dl is severe anaemia. [1] Includes currently married women age 15-19 years who were not pregnant at the time of survey. @ Literate adolescent with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. ( ) Based on less than 50 unweighted cases.

Table 4.5.4 ANAEMIA AMONG PREGNANT WOMEN

Percentage of pregnant women (age 15-44 years) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Chhatisgarh, 2002-04

Background characteristic	Parentage of pregnant women with any anaemia	Percentage of pregnant women with			Number of pregnant women
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
15-19	97.0	38.2	56.0	2.9	114
20-24	98.0	38.1	55.1	4.8	273
25-29	98.3	35.1	57.0	6.2	219
30-34	94.5	32.1	56.2	6.2	73
Residence					
Rural	98.3	35.4	57.4	5.6	536
Urban	95.5	40.0	52.1	3.4	165
Education					
Non-literate	98.5	31.3	60.4	6.8	358
0-9@years	97.6	44.1	49.8	3.7	250
10 years & above	94.4	35.7	56.5	2.2	93
Religion					
Hindu	98.2	36.0	57.2	5.0	676
Other	(88.5)	(38.5)	(42.3)	(7.7)	25
Caste/tribe#					
Scheduled caste	98.3	35.3	57.0	6.0	115
Scheduled tribe	98.5	31.3	57.6	9.7	226
Other backward class	96.9	37.9	57.4	1.7	269
Other	96.3	48.1	45.1	3.1	76
Standard of living index					
Low	98.4	34.1	57.8	6.5	465
Medium	95.9	36.2	58.0	1.6	162
High	96.7	51.9	41.2	3.6	73
Total	97.6	36.4	56.1	5.1	701

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. @ Literate women with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. ( ) Based on less than 50 unweighted cases. Total includes 17 & 4 cases in age group 35-39 & 40-44 category and 14 don't know cases that were not shown separately.

4.6 DELHI

4.6.1 Weight for Age of Children:

In Delhi, weight was measured for 69 percent of children under 6 years of age in sampled households. On the whole, data on weight are available for nearly 4 thousand children in the state. Table 4.6.1 shows the percentage of children under 6 years of age classified as undernourished as measured by weight for age index by some selected background characteristics. In the following discussion, children whose weights in SD unit (Z score) is less than –3 would be referred to as 'severely underweight' and those with weight in SD unit less than –2 would be referred to simply as 'underweight'. Slightly more than one-tenth (11 percent) of the children in Delhi are severely underweight and about one third (35 percent) of the children are underweight. The proportion of undernourished children increases rapidly with the child's age upto 6-11 months and shows a decrease thereafter. More than one-tenth (17 percent) of the children in the age group 6-11 months are severely underweight whereas more than two-fifth (42 percent) of the children in the same age group are underweight. By age 48-71 months the corresponding figures for severely underweight and underweight children stabilize at 8 and 36 percent, respectively.

Birth order of the child can also influence the nutritional status of the child to a great extent. The second round of RCH Survey revealed that young children in families with four or more siblings are most likely to be underweight. Whereas 10 and 31 percent of children of first birth order are severely underweight and underweight respectively, the corresponding figures among children of birth order six or more are 14 and 42 percent respectively. The observed sex differential both in severe underweight and underweight children is marginal. The extent of underweight children, both severe underweight and underweight, is higher in urban areas compared to that in rural areas. While around 11 and 36 percent children in urban areas are severe underweight and underweight, the corresponding figures for rural areas are 8 and 25 percent respectively.

Children's nutritional status is also expected to be influenced by mother's educational attainment. Children whose mothers are non-literate are about twice as likely to be severely underweight as compared to children whose mothers have ten or more years of schooling. A similar pattern is also found in the case of underweight children. The percentage of underweight children is 40 among non-literate mothers while it is 24 among mothers with ten or more years of schooling.

The results of the RCH survey show that Muslim children tend to be slightly more underweight than Hindu children. The percentage of underweight children among Hindus and Muslim is respectively 35 and 39 percent. Children from scheduled castes have the highest percentage of both severely underweight and underweight cases (13 percent and 42 percent, respectively), whereas children belonging to the 'schedule tribe' category are relatively better off than others. As expected, household's standard of living (SLI) is strongly correlated with the malnourishment of children as reflected through the weight for age anthropometric measure.

Table 4.6.1 WEIGHT FOR AGE OF CHILDREN

Percentage of children (age 0-71 months) classified as undernourished by weight for age anthropometric matrix of nutritional status according to some selected background characteristics, Delhi, 2002-04

Background characteristic	Weight for age		Number of children
	Percentage Below - 3 SD	Percentage Below - 2 SD[1]	
Age of child (in months)			
0-5	4.8	8.0	133
6-11	16.5	42.3	191
12-23	14.2	35.2	444
24-47	12.7	37.0	1,160
48-71	7.6	35.8	1,275
Birth order			
1	10.1	31.4	843
2-3	9.5	33.7	1,419
4-5	14.2	41.4	461
6+	14.2	42.0	134
Mother's not interviewed	12.1	41.1	345
Sex of the child			
Male	11.9	36.6	1,715
Female	9.5	33.9	1,488
Residence			
Rural	7.6	24.5	292
Urban	11.1	36.4	2,911
Mother's education			
Non-literate	12.2	40.0	1,109
0-9@years	13.0	38.1	898
10 years & above	6.1	23.8	835
Mother's not interviewed	12.0	41.0	361
Religion			
Hindu	10.1	35.0	2690
Muslim	15.5	38.5	424
Sikh	14.0	32.2	56
Other	(2.6)	(31.6)	32
Caste/tribe#			
Scheduled caste	12.9	42.4	858
Scheduled tribe	(4.7)	(23.3)	49
Other backward class	10.6	35.3	649
Other	10.0	32.0	1,552
Standard of living index			
Low	20.1	53.9	87
Medium	13.0	40.2	1,316
High	8.8	30.9	1,798
Total	10.8	35.3	3,203

Note: This index is expressed in standard deviation units (SD) from the median of the International Reference Population. [1]Includes children who are below – 3 SD from the International Reference Population median. @ Literate mothers with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. ( ) Based on less than 50 unweighted cases.

Around one-fifth (20 percent) of the children belonging to households of lower standard of living are severely underweight and more than half (54 percent) of the children in the same category are underweight. Whereas the corresponding figures for children belonging to high standard of living households are 9 and 31 percent respectively.

Of the 9 districts in the state, in 3 districts the percentage of underweight children in less than 30, in 6 districts their percentage is between 30 and 50. North and eastern parts of the state shows moderate prevalence of underweight children.

4.6.2 Anaemia among Children, Adolescent Girls, and Pregnant Women

In Delhi, haemoglobin level was measured for 64 percent of children under 6 years of age in sampled households. On the whole, the data on haemoglobin level are available for around 3 thousand children in the state. Table 4.6.2 shows the percent of children aged 0-71 months classified by the degree of anaemia and by selected background characteristics. Overall, more than 95 percent of these children have some level of anaemia, with 46 percent who are mildly anaemic, 48 percent who are moderately anaemic and 4 percent who are severely anaemic. Certain background characteristics of children show strong association with the level of anaemia. Some of them are: children aged 12-23 months (99 percent), children of higher birth order, more specifically, children of order six or more (99 percent), children who are severely underweight (100.0 percent), children from urban areas (98 percent), children of non-literate mothers (98 percent), children belonging to other religious groups (99 percent), children of scheduled tribes (100.0 percent) and children belonging to households characterized by low standard of living (100.0 percent).

Of the 9 districts in the state, in 4 districts their percentage is between 35 and 50, and in 5 districts their percentage is more than 50. Districts with high prevalence of anaemia among children are situated mainly in southern part of the state.

Data on anaemia levels are available for 2 thousand adolescent girls aged 10-19 years who constituted 45 percent of the sample. Table 4.6.3 shows anaemia levels for adolescent girls aged 10-19 years by selected background characteristics. In Delhi, overall, 99 percent of adolescent girls have any anaemia. Nineteen percent of them are mildly anaemic, 52 percent are moderately anaemic and 29 percent are having severe anaemia. It has been found from the survey results that except moderate anaemia, the percentage of girls in the remaining three categories of anaemia increases with the increase in age from 10-14 to 15-19 years. The incidence of any anaemia is higher (100 percent) among adolescent girls who are currently married compared to that among their unmarried counterpart (99 percent). Except severe anaemia, the occurrence of anaemia in the other categories is found to be higher in rural areas than in urban areas. The prevalence of anaemia by the educational attainment of adolescents does not vary much. The level of anaemia is higher among Hindu adolescent girls (99 percent). Adolescent girls from 'Scheduled caste' and 'Scheduled tribe' are more likely to suffer from any anaemia.

Of the 9 districts in the state, in 3 districts their percentage is between 50 and 75, and in 6 districts their percentage is more than 75. Districts with high prevalence of anaemia among adolescent girls are situated in most parts of the state.

Haemoglobin levels were measured for nearly 263 pregnant women aged 15-44 years who constituted 59 percent of the sample. Table 4.6.4 shows the anaemia status among pregnant women according some selected background characteristics. Around 95 percent of the pregnant women in Delhi are suffering from some anaemia. Among pregnant women, 47 percent who have mild anaemia, 47 percent who have moderate anaemia and less than two percent have severe anaemia. Women residing in rural areas are more likely (100 percent) to experience any anaemia compared to their urban counterparts (95 percent). The prevalence of anaemia decreases marginally with the level of educational attainment of the pregnant women. . The level of anemia does not show variation with religion of the pregnant women. Pregnant women among other backward class are more prone to be anaemic (99 percent) among all the caste/tribe categories. As expected, standard of living is negatively associated with the anaemia status of the pregnant women. Around 97 percent pregnant women belonging to households with medium standard of living are anaemic. However, the proportion of anaemic women belonging to households with higher standard of living (93 percent) is not negligible.

Table 4.6.2 ANAEMIA AMONG CHILDREN

Percentage of children (age 0-71 months) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Delhi, 2002-04

Background characteristic	Parentage of children with any anaemia	Percentage of children with			Number of children
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age of child (in months)					
0-5	97.5	39.9	54.3	3.3	152
6-11	98.7	27.5	66.7	4.5	171
12-23	99.2	28.4	65.3	5.6	375
24-47	97.4	40.6	51.7	5.0	977
48-71	96.5	59.8	34.7	2.0	1,078
Birth order					
1	96.7	49.1	43.0	4.6	746
2-3	97.4	43.8	49.8	3.8	1,221
4-5	97.9	43.4	52.6	1.9	394
6+	98.5	34.1	59.7	4.7	117
Mother's not interviewed	97.6	52.0	41.9	3.6	275
Sex of the child					
Male	97.4	47.4	45.9	4.1	1,447
Female	97.3	43.5	50.3	3.4	1,295
Weight for age of children					
Normal	96.5	46.8	45.6	4.1	1,869
Below – 2 SD[1]	99.2	43.0	52.9	3.2	885
Below – 3 SD	99.5	38.0	59.1	2.4	277
Residence					
Rural	96.4	47.2	45.6	3.6	270
Urban	97.5	45.4	48.2	3.8	2,483
Mother's education					
Non-literate	98.4	43.4	51.6	3.4	958
0-9@years	97.5	45.3	47.9	4.3	774
10 years & above	95.7	46.2	45.7	3.8	729
Mother's not interviewed	97.7	52.2	42.0	3.5	292
Religion					
Hindu	97.2	45.7	47.8	3.7	2,309
Muslim	98.2	46.4	48.4	3.4	371
Other	99.0	38.8	52.2	7.9	73
Caste/tribe#					
Scheduled caste	98.5	43.7	51.1	3.8	716
Scheduled tribe	(100.0)	(45.2)	(47.6)	(7.1)	48
Other backward class	98.1	49.9	43.6	4.6	532
Other	96.5	44.8	48.3	3.5	1,371
Standard of living index					
Low	100.0	37.3	54.7	8.0	79
Medium	98.2	43.4	51.9	2.9	1,103
High	96.6	47.6	44.8	4.2	1,571
Total	97.4	45.6	48.0	3.8	2,753

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. [1] Includes children who are below – 3 SD from the International Reference median. @ Literate mothers with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. ( ) based on less than 50 unweighted cases. Total includes 11 cases and 1 case with missing information on sex of child and standard of living index respectively that were not shown separately.

Table 4.6.3 ANAEMIA AMONG ADOLESCENT GIRLS

Percentage of adolescent girls[1] (age 10-19 years) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Delhi, 2002-04

Background characteristic	Parentage of adolescent with any anaemia	Percentage of adolescent with			Number of adolescent girls
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
10-14	99.0	18.7	52.5	27.7	1,181
15-19	99.5	18.9	50.5	30.0	942
Marital status					
Currently married	(100.0)	(22.7)	(50.0)	(27.3)	27
Currently not married	99.2	18.8	51.5	28.8	2,094
Residence					
Rural	97.7	23.9	57.4	16.5	134
Urban	99.3	18.5	51.2	29.6	1,989
Education					
Non-literate	100.0	14.2	59.2	26.5	99
0-9@years	99.2	18.9	51.1	29.1	1,615
10 years & above	99.1	19.5	51.9	27.6	409
Religion					
Hindu	99.3	18.0	51.8	29.5	1,803
Muslim	98.8	23.3	50.6	25.0	256
Other	98.3	25.4	49.9	22.9	64
Caste/tribe#					
Scheduled caste	99.9	13.0	51.8	35.1	617
Scheduled tribe	(100.0)	(17.2)	(55.2)	(27.6)	37
Other backward class	98.6	21.8	52.1	24.7	392
Other	98.9	21.3	51.0	26.6	1,042
Standard of living index					
Low	(100.0)	(12.5)	(70.8)	(16.7)	25
Medium	99.2	17.1	50.9	31.3	601
High	99.2	19.6	51.6	27.9	1,497
Total	99.2	18.8	51.6	28.7	2,123

Note: Haemoglobin level between 10.0 - 11.9 g/dl is mild anaemia, 8.0 - 9.9 g/dl is moderate anaemia and below 8.0 g/dl is severe anaemia. [1] Includes currently married women age 15-19 years who were not pregnant at the time of survey. @ Literate adolescent with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. ( ) Based on less than 50 unweighted cases.

Table 4.6.4 ANAEMIA AMONG PREGNANT WOMEN

Percentage of pregnant women (age 15-44 years) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Delhi, 2002-04

Background characteristic	Parentage of pregnant women with any anaemia	Percentage of pregnant women with			Number of pregnant women
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
20-24	95.9	50.4	44.6	0.9	121
25-29	94.0	43.9	48.7	1.4	92
Residence					
Rural	(100.0)	(56.5)	(43.5)	(0.0)	25
Urban	94.6	44.9	48.3	1.4	238
Education					
Non-literate	98.3	40.0	55.9	2.5	94
0-9@years	94.1	44.4	49.1	0.6	85
10 years & above	92.5	55.9	36.0	0.6	84
Religion					
Hindu	95.0	45.0	48.5	1.5	231
Other	(95.3)	(60.5)	(34.9)	(0.0)	32
Caste/tribe#					
Scheduled caste	93.8	39.1	54.0	0.7	81
Other backward class	99.1	54.3	41.3	3.5	52
Other	94.0	46.6	46.6	0.9	123
Standard of living index					
Medium	98.0	53.0	42.8	2.2	94
High	93.1	43.0	49.2	0.8	160
Total	95.1	46.5	47.3	1.3	263

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. @ Literate women with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. ( ) Based on less than 50 unweighted cases. Total includes 22,17,9 & 3 cases in age group 15-19, 30-34, 35-39 & 40-44, 1 & 7 cases in schedule tribe & don't know cases and 9 cases in low standard of living cases that were not shown separately

4.7 GOA

4.7.1 Weight for Age of Children:

In Goa, weight was measured for 74 percent of children under 6 years of age in sampled households. On the whole, data on weight are available for nearly 7 hundred children in the state. Table 4.7.1 shows the percentage of children under 6 years of age classified as undernourished as measured by weight for age index by some selected background characteristics. In the following discussion, children whose weight in SD unit (Z score) is less than –3 would be referred to as 'severely underweight' and those with weights in SD unit less than –2 would be referred to simply as 'underweight'. Around 7 percent of the children in Goa are severely underweight and 30 percent of the children are underweight. The proportion of undernourished children increases rapidly with the child's age upto 6-11 months and shows a decrease thereafter. Around 4 percent of the children in the age group 12-23 months are severely underweight whereas more than one-fourth (31 percent) of the children in the same age group are underweight. By age 48-71 months the corresponding figures for severely underweight and underweight children stabilize at 10 and 39 percent, respectively.

Birth order of the child can also influence the nutritional status of the child. The second round of the RCH survey reveals that young children in families with four to five siblings are most likely to be underweight. Whereas 7 and 28 percent of children of first birth order are severely underweight and underweight respectively, the corresponding figures among children of birth order four or more are 9 and 41 percent, respectively. The observed sex differential both in severe underweight and underweight children is marginal. The extent of underweight children, both severe underweight and underweight, is higher in urban areas. While around 6 and 28 percent children in rural areas are severely underweight and underweight, the corresponding figures for urban areas than rural areas are 7 and 32 percent respectively.

Children's nutritional status is also expected to be influenced by mother's educational attainment. Children whose mothers are non-literate are about almost twice as likely to be severely underweight as compared to children whose mothers have ten or more years of schooling. A similar pattern is also found in the case of underweight children. The percentage of underweight children is 45 among non-literate mothers while it is 23 among mothers with ten or more years of schooling.

The results of the RCH survey show that Hindu children tend to be slightly more underweight than Christian children. The percentage of underweight children among Hindus and Christians is respectively 32 and 26 percent. Children from 'other castes' have the highest percentage of both severely underweight and underweight cases (7 and 28 percent, respectively), whereas children belonging to the 'other backward class' category are relatively better off than others. As expected, household's standard of living index (SLI) is strongly correlated with the malnourishment of children as reflected through the weight for age anthropometric measure.

Table 4.7.1 WEIGHT FOR AGE OF CHILDREN

Percentage of children (age 0-71 months) classified as undernourished by weight for age anthropometric matrix of nutritional status according to some selected background characteristics, Goa, 2002-04

Background characteristic	Weight for age		Number of children
	Percentage Below – 3 SD	Percentage Below – 2 SD[1]	
Age of child (in months)			
0-5	(0.0)	(7.7)	43
6-11	(8.7)	(26.1)	23
12-23	4.1	31.2	111
24-47	4.9	24.7	228
48-71	10.4	39.0	241
Birth order			
1	6.5	27.9	260
2-3	5.0	28.1	300
4-5	(9.1)	(40.9)	46
Mother's not interviewed	(18.2)	(47.7)	33
Sex of the child			
Male	6.8	31.7	322
Female	6.3	28.3	323
Residence			
Rural	6.2	28.1	313
Urban	6.8	31.9	333
Mother's education			
Non-literate	10.3	45.1	119
0-9@years	4.1	25.7	190
10 years & above	4.7	22.8	286
Mother's not interviewed	17.6	52.2	50
Religion			
Hindu	6.5	31.5	415
Muslim	9.5	31.1	93
Christian	4.8	25.5	135
Caste/tribe#			
Other backward class	3.1	22.0	177
Other	6.6	28.3	385
Standard of living index			
Low	6.7	45.8	59
Medium	8.7	34.1	243
High	4.9	24.5	344
Total	6.5	30.0	646

Note: This index is expressed in standard deviation units (SD) from the median of the International Reference Population. [1]Includes children who are below – 3 SD from the International Reference Population median. @ Literate mothers with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. Total includes 23 cases in age of child, 6 cases in birth order 6 or more, 3 cases of other religion that were not shown separately, ( ) Based on less than 50 unweighted cases.

Less than half (46 percent) of the children belonging to households of lower standard of living are severely underweight and (25 percent) of the children in the same category are underweight. Whereas the corresponding figures for children belonging to high standard of living households are 5 and 26 percent, respectively.

Of the 2 districts in the state, in one district the percentage of underweight children in less than 30, in 1 district their percentage is between 30 and 50. Southern part of the state shows moderate prevalence of underweight children.

4.7.2 Anaemia among Children and Adolescent Girls

In Goa, haemoglobin level was measured for 48 percent of children under 6 years of age in sampled households. On the whole, the data on haemoglobin level are available for over 3 hundred children in the state. Table 4.7.2 shows the percent of children aged 0-71 months classified by the degree of anaemia and by selected background characteristics. Overall, 95 percent of the children have some level of anaemia, with 70 percent who are mildly anaemic, 25 percent who are moderately anaemic and less than 1 percent who are severely anaemic. Certain background characteristics of children show strong association with the level of anaemia. Some of them are: children aged 12-23 months (98 percent), children of higher birth order, more specifically, children of order four to five (97 percent), female children (97 percent), children who are normal weight (95 percent), children from urban areas (96 percent), children of non-literate mothers (98 percent), Muslim children (78 percent), children of other backward class (99 percent) and children belonging to households characterized by medium standard of living (98 percent). But even in the socio-economic groups with the lowest level of anaemia, over two-thirds of children are anaemic. Both 2 districts in Goa, the percentage of children with severe or moderate anaemia is in less than 30.

Data on anaemia levels are available for more than 300 adolescent girls aged 10-19 years who constituted 43 percent of the sample. Table 4.7.3 shows anaemia levels for adolescent girls by selected background characteristics. In Goa, 97 percent of adolescent girls have any anaemia. Forty-seven of them are mildly anaemic, 39 percent are moderately anaemic and 11 percent are having severe anaemia. It has been found from the survey results that except mild anaemia, the percentage of girls in the remaining three categories of anaemia decreases with the increase in age from 10-14 to 15-19 years. Except mild and any anaemia, the occurrence of anaemia in the other categories is found to be higher in urban areas than in rural areas. The prevalence of anaemia does not vary much with the educational attainment of girls. The level of anaemia is higher among Hindu adolescent girls (97 percent). Adolescent girls from 'other backward class' are more likely to suffer from any anaemia. Household standard of living does not show strong association with the prevalence of any anaemia. Around 100 percent of the adolescents are suffering from any anaemia whereas this percentage is 96 percent in case of adolescent girls belonging to households with high standard of living.

Of the 2 districts in the state, in 1 district the percentage of adolescent girls with severe or moderate anaemia is in less than 50, in 1 district their percentage is between 50 and 75. Districts with moderate prevalence of anaemia among adolescent girls are situated mainly in northern part of the state.

Table 4.7.2 ANAEMIA AMONG CHILDREN

Percentage of children (age 0-71 months) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Goa, 2002-04

Background characteristic	Parentage of children with any anaemia	Percentage of children with			Number of children
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age of child (in months)					
12-23	97.7	50.8	45.7	1.2	61
24-47	94.5	77.2	17.3	0.0	116
48-71	94.1	75.7	18.4	0.0	132
Birth order					
1	95.4	65.4	29.5	0.6	124
2-3	95.7	72.2	23.5	0.0	147
4-5	(96.8)	(71.0)	(25.8)	(0.0)	31
Sex of the child					
Male	92.8	68.6	23.7	0.4	157
Female	97.1	71.0	26.1	0.0	168
Weight for age of children					
Normal	95.2	72.4	22.8	0.0	204
Below – 2 SD[1]	94.8	65.6	28.6	0.6	122
Below – 3 SD	(88.2)	(73.5)	(14.7)	(0.0)	31
Residence					
Rural	93.4	74.1	18.8	0.5	150
Urban	96.4	66.2	30.2	0.0	176
Mother's education					
Non-literate	98.2	57.5	40.6	0.0	77
0-9@years	97.7	79.6	18.1	0.0	92
10 years & above	93.9	70.0	23.4	0.6	128
Mother's not interviewed	(81.6)	(68.4)	(13.2)	(0.0)	29
Religion					
Hindu	95.8	71.5	24.3	0.0	218
Muslim	98.6	54.7	43.9	0.0	52
Christian	88.1	77.9	8.8	1.3	53
Caste/tribe#					
Other backward class	99.1	75.4	23.6	0.0	76
Other	92.8	70.8	21.6	0.4	197
Standard of living index					
Low	97.1	54.7	42.4	0.0	49
Medium	98.3	70.2	28.1	0.0	125
High	91.6	74.4	16.7	0.5	152
Total	95.0	69.8	24.9	0.2	326

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. [1] Includes children who are below – 3 SD from the International Reference median. @ Literate mothers with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. ( ) Based on less than 50 unweighted cases. Total includes 1 case with missing information on birth order was not shown separately. Total includes 8 cases and 9 cases in age group 0-5 and 6-11 respectively, 7 cases in birth order 6+, 2 cases in religion other, 8 cases in scheduled tribe that were not shown separately.

Table 4.7.3 ANAEMIA AMONG ADOLESCENT GIRLS

Percentage of adolescent girls[1] (age 10-19 years) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Goa, 2002-04

Background characteristic	Parentage of adolescent with any anaemia	Percentage of adolescent with			Number of adolescent girls
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
10-14	97.7	44.2	41.4	12.1	174
15-19	95.2	50.8	35.3	9.1	136
Marital status					
Currently not married	96.6	47.7	38.2	10.6	305
Residence					
Rural	97.0	51.6	35.6	9.8	175
Urban	96.1	41.3	42.8	12.0	134
Education					
0-9@years	96.4	48.3	36.5	11.6	217
10 years & above	96.5	47.3	41.8	7.4	76
Religion					
Hindu	96.8	43.2	43.2	10.5	208
Christian	96.4	55.7	28.3	12.4	72
Other	(96.4)	(53.6)	(32.1)	(10.7)	29
Caste/tribe#					
Other backward class	98.6	49.1	38.8	10.7	91
Other	94.8	47.2	38.1	9.6	179
Standard of living index					
Low	100.0	45.0	46.9	8.1	52
Medium	95.3	43.3	36.0	16.1	112
High	96.4	50.8	38.0	7.6	146
Total	96.6	47.1	38.7	10.8	309

Note: Haemoglobin level between 10.0 - 11.9 g/dl is mild anaemia, 8.0 - 9.9 g/dl is moderate anaemia and below 8.0 g/dl is severe anaemia. [1] Includes currently married women age 15-19 years who were not pregnant at the time of survey. @ Literate adolescent with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. Total includes 4 currently married adolescent, 16 Non-literate, 11 and 5 schedule caste and schedule tribe respectively that were not shown separately. () Based on less than 50 unweighted cases.

4.8 GUJARAT

4.8.1 Weight for Age of Children:

In Gujarat, weight was measured for 70 percent of children under 6 years of age in sampled households. On the whole, data on weight are available for nearly 13 thousand children in the state. Table 4.8.1 shows the percentage of children under 6 years of age classified as undernourished, as measured by weight for age index by some selected background characteristics. In the following discussion, children whose weights in SD unit (Z score) is less than –3 would be referred to as 'severely underweight' and those with weight in SD unit less than –2 would be referred to simply as 'underweight'. More than one-tenth (15 percent) of the children in Gujarat are severely underweight and less than half (46 percent) of the children are underweight. The proportion of undernourished children increases rapidly with the child's age upto 12-23 months and shows a decrease thereafter. Around one-fifth (21 percent) of the children in the age group 12-23 months are severely underweight whereas more than half (50 percent) of the children in the same age group are underweight. By age 48-71 months the corresponding figures for severely underweight and underweight children stabilize at 15 and 52 percent, respectively.

Birth order of the child can also influence the nutritional status of the child. The second round of the RCH survey reveals that young children in families with six or more siblings are most likely to be underweight. Whereas 12 and 40 percent of children of first birth order are severely underweight and underweight respectively, the corresponding figures among children of birth order six or more are 25 and 62 percent, respectively. The observed sex differential both in severe underweight and underweight children is marginal. The extent of underweight children, both severe underweight and underweight, is higher in rural areas compared to that in urban areas. While around 9 and 35 percent children in urban areas are severely underweight and underweight, the corresponding figures for rural areas are 19 and 52 percent respectively.

Children's nutritional status is also expected to be influenced by mother's educational attainment. Children whose mothers are non-literate are more than three times as likely to be severely underweight as compared to children whose mothers have ten or more years of schooling. A similar pattern is also found in the case of underweight children. The percentage of underweight children is 56 among non-literate mothers while it is 29 among mothers with ten or more years of schooling.

The results of the RCH survey show that Christian children tend to be slightly more underweight than Hindu children. The percentage of underweight children among Hindus and Christians is respectively 47 and 55 percent. Children from scheduled tribe have the highest percentage of both severely underweight and underweight cases (24 and 59 percent, respectively), whereas children belonging to the 'other castes' category are relatively better off than others. As expected, household's standard of living index (SLI) is strongly correlated with the malnourishment of children as reflected through the weight for age anthropometric measure.

Table 4.8.1 WEIGHT FOR AGE OF CHILDREN

Percentage of children (age 0-71 months) classified as undernourished by weight for age anthropometric matrix of nutritional status according to some selected background characteristics, Gujarat, 2002-04

Background characteristic	Weight for age		Number of children
	Percentage Below -3 SD	Percentage Below -2 SD[1]	
Age of child (in months)			
0-5	1.6	8.1	1,072
6-11	11.3	34.9	1,050
12-23	20.7	50.3	2,012
24-47	18.0	51.1	4,198
48-71	14.8	51.5	4,105
Birth order			
1	12.4	40.2	3,612
2-3	15.0	46.4	5,546
4-5	19.7	52.7	1,742
6+	25.1	62.3	554
Mother's not interviewed	15.7	44.5	984
Sex of the child			
Male	14.8	46.4	6,644
Female	16.1	45.5	5,793
Residence			
Rural	18.7	51.7	8,086
Urban	9.2	35.4	4,351
Mother's education			
Non-literate	21.4	56.2	5,027
0-9@years	13.4	43.8	3,929
10 years & above	6.4	29.5	2,490
Mother's not interviewed	15.7	44.4	991
Religion			
Hindu	15.7	46.6	11,100
Muslim	13.0	42.0	1,101
Christian	20.8	55.2	88
Jain	10.3	26.5	121
Other	(25.8)	(41.9)	27
Caste/tribe#			
Scheduled caste	19.2	51.7	1,419
Scheduled tribe	23.7	58.6	1,805
Other backward class	16.1	47.3	4,999
Other	8.5	35.5	3,729
Standard of living index			
Low	23.8	58.7	4,660
Medium	13.4	46.2	4,165
High	6.8	29.4	3,612
Total	15.4	46.0	12,437

Note: This index is expressed in standard deviation units (SD) from the median of the International Reference Population. [1]Includes children who are below – 3 SD from the International Reference Population median. @ Literate mothers with no years of schooling are also included. . # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. ( ) Based on less than 50 unweighted cases

Around one-fourth (24 percent) of the children belonging to households of lower standard of living are severely underweight and around three-fifth of the children in the same category are underweight. Whereas the corresponding figures for children belonging to high standard of living households are 7 and 29 percent, respectively.

Of the 25 districts in the state, in 15 districts their percentage is between 30 and 50, and in 10 districts their percentage is more than 50. Eastern part of the state shows high prevalence of underweight children.

4.8.2 Anaemia among Children, Adolescent Girls, and Pregnant Women

In Gujarat, haemoglobin level was measured for 58 percent of children under 6 years of age in sampled households. On the whole, the data on haemoglobin level are available for over 9 thousand children in the state. Table 4.8.2 shows the percent of children aged 0-71 months classified by the degree of anaemia and by selected background characteristics. Overall, 97 percent of the children have some level of anaemia, with 40 percent who are mildly anaemic, 52 percent who are moderately anaemic and 5 percent who are severely anaemic. Certain background characteristics of children show strong association with the level of anaemia. Some of them are: children aged 12-23 months (98 percent), children of higher birth order, more specifically, children of order six or more (98 percent), children who are severely underweight (98 percent), children from rural areas (97 percent), children of mothers with 0-9 years of education (97 percent), Muslim children (98 percent), children of schedule castes (98 percent) and children belonging to households characterized by low standard of living (98 percent). But even in the socio-economic groups with the lowest level of anaemia, more than ninety percent of children are anaemic. On the other hand, in no socio-economic group the prevalence of severe anaemia is more than ten percent.

Of the 25 districts in the state, in 4 districts the percentage of children with severe or moderate anaemia is in less than 35, in 4 districts their percentage is between 35 and 50, and in 17 districts their percentage is more than 50. Districts with high prevalence of anaemia among children are situated mainly in east and western part of the state.

Data on anaemia levels are available for about 8 thousand adolescent girls aged 10-19 years who constituted 60 percent of the sample. Table 4.8.3 shows anaemia level for adolescent girls aged 10-19 years by selected background characteristics. In Gujarat, overall, 99 percent of adolescent girls have any anaemia. Nineteen percent of them are mildly anaemic, 41 percent are moderately anaemic and 39 percent are experiencing severe anaemia. No significant age differential is found in the prevalence of anaemia among adolescents in Gujarat. Though there is no rural-urban differential in the prevalence of any anaemia, it varies substantially by its degree. While the prevalence of mild and moderate anaemia is higher in urban areas, that of severe anaemia is found to high in rural areas. The prevalence of anaemia does not vary much with the educational attainment of girls. The level of anaemia is higher among Muslim adolescent girls (99 percent). Adolescent girls from 'other caste' are more likely to suffer from any anaemia. The adolescent girls from households with lower standard of living are slightly more likely to be anaemic.

Of the 25 districts in the state, in 1 district the percentage of adolescent girls with severe or moderate anaemia is in less than 50, in 7 districts their percentage is between 50 and 75, and in 17 districts their percentage is more than 75. Districts with high prevalence of anaemia among adolescent girls are situated mainly in east and southern parts of the state.

Haemoglobin levels were measured for more than one thousand pregnant women aged 15-44 years who constituted 72 percent of the sample. Table 4.8.4 shows the anaemia status among pregnant women according some selected background characteristics. Around 98 percent of the pregnant women in Gujarat are suffering from some anaemia. Among pregnant women, 44 percent have mild anaemia, 49 percent who have moderate anaemia and 5 percent have severe anaemia. Thus, although levels of any anaemia among pregnant women and adolescent girls are about the same, the prevalence of severe anaemia is substantially higher in adolescent girls (39 percent) than in pregnant women (5 percent). This may be because more stringent cut-off level for severe anaemia has been used in the case of adolescent girls (8 g/dl) than in the case of pregnant women (5 g/dl). Table 4.8.4 clearly shows that percentage of pregnant women with any anaemia rises steadily with the increase in the age of the pregnant women from 98 percent for the age group 15-19 to 100.0 percent in the age group 35-39. Women, whether from rural or urban areas, are equally likely to experience any anaemia. The prevalence of anaemia decreases marginally with the level of educational attainment of the pregnant women. The level of anemia does not show variation with religion of the pregnant women. Prégnant women among scheduled tribe are more prone to be anaemic (100.0 percent) among all the caste categories. . It is also interesting to note that in case of mild anaemia, pregnant women from households of higher standard of living are more likely to be anaemic. Where as standard of living is negatively associated with the anaemia status of the pregnant women in other categories.

Table 4.8.2 ANAEMIA AMONG CHILDREN

Percentage of children (age 0-71 months) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Gujarat, 2002-04

Background characteristic	Parentage of children with any anaemia	Percentage of children with			Number of children
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age of child (in months)					
0-5	96.8	38.0	51.5	7.3	526
6-11	97.2	40.3	48.2	8.7	770
12-23	98.1	35.4	55.5	7.2	1,592
24-47	96.7	36.5	55.0	5.1	3,548
48-71	96.0	45.7	47.3	3.0	3,495
Birth order					
1	96.3	40.5	51.0	4.8	2,813
2-3	96.7	39.8	51.7	5.1	4,450
4-5	97.4	41.3	50.8	5.3	1,439
6+	97.9	34.3	56.8	6.7	452
Mother's not interviewed	96.0	39.6	52.2	4.2	777
Sex of the child					
Male	96.7	39.8	51.8	5.1	5,337
Female	96.7	40.1	51.5	5.0	4,592
Weight for age of children					
Normal	95.9	43.0	48.6	4.3	5,250
Below – 2 SD[1]	97.6	36.5	55.1	6.0	4,681
Below – 3 SD	98.3	32.6	57.6	8.1	1,504
Residence					
Rural	96.9	36.2	54.6	6.1	6,547
Urban	96.3	47.1	46.1	3.2	3,384
Mother's education					
Non-literate	97.0	38.1	52.8	6.1	4,053
0-9@years	97.3	38.8	53.6	5.0	3,228
10 years & above	95.2	46.2	45.7	3.4	1,868
Mother's not interviewed	96.0	39.7	52.2	4.2	782
Religion					
Hindu	96.7	39.9	51.7	5.1	8,924
Muslim	98.3	39.1	53.8	5.4	829
Christian	85.5	57.8	24.8	2.8	83
Jain	88.9	36.6	52.2	0.0	83
Caste/tribe#					
Scheduled caste	97.7	46.2	47.6	3.9	1,175
Scheduled tribe	96.9	26.5	61.0	9.5	1,437
Other backward class	96.6	38.8	52.8	5.0	4,029
Other	96.5	45.9	47.1	3.5	2,916
Standard of living index					
Low	97.5	33.3	56.8	7.5	3,753
Medium	96.8	42.4	50.1	4.2	3,376
High	95.5	45.9	46.6	2.9	2,802
Total	96.7	39.9	51.7	5.1	9,931

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. [1] Includes children who are below – 3 SD from the International Reference median. @ Literate mothers with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. Total includes 3 cases with missing information on sex of child and 13 cases of other religions that were not shown separately.

Table 4.8.3 ANAEMIA AMONG ADOLESCENT GIRLS

Percentage of adolescent girls[1] (age 10-19 years) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Gujarat, 2002-04

Background characteristic	Parentage of adolescent with any anaemia	Percentage of adolescent with			Number of adolescent girls
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
10-14	98.5	19.5	40.9	38.2	3,947
15-19	98.7	18.5	40.3	39.9	3,873
Marital status					
Currently married	98.8	9.9	36.8	52.1	451
Currently not married	98.6	19.5	40.8	38.2	7,369
Residence					
Rural	98.6	15.9	38.7	44.0	4,625
Urban	98.7	23.4	43.4	31.8	3,196
Education					
Non-literate	99.1	13.3	36.7	49.1	995
0-9@years	98.5	19.2	40.9	38.4	5,497
10 years & above	98.4	22.4	42.1	33.9	1,328
Religion					
Hindu	98.5	19.0	40.2	39.4	6,933
Muslim	99.8	15.6	45.2	38.9	710
Christian	95.7	41.3	26.7	27.8	74
Jain	99.1	27.8	47.4	23.9	94
Caste/tribe#					
Scheduled caste	98.6	17.0	40.3	41.3	855
Scheduled tribe	98.7	15.2	24.2	59.3	889
Other backward class	98.2	16.6	43.6	38.0	3,066
Other	98.9	23.5	42.8	32.6	2,825
Standard of living index					
Low	99.1	11.8	35.3	52.0	2,081
Medium	98.7	20.3	41.7	36.6	2,704
High	98.2	22.7	43.2	32.3	3,036
Total	98.6	19.0	40.6	39.0	7,820

Note: Haemoglobin level between 10.0 - 11.9 g/dl is mild anaemia, 8.0 - 9.9 g/dl is moderate anaemia and below 8.0 g/dl is severe anaemia. [1] Includes currently married women age 15-19 years who were not pregnant at the time of survey. @ Literate adolescent with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. In religion 10 cases of other category are not shown separately.

Table 4.8.4 ANAEMIA AMONG PREGNANT WOMEN

Percentage of pregnant women (age 15-44 years) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Gujarat, 2002-04

Background characteristic	Parentage of pregnant women with any anaemia	Percentage of pregnant women with			Number of pregnant women
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
15-19	98.5	40.9	52.8	4.8	185
20-24	99.6	45.6	48.8	5.2	540
25-29	96.1	43.0	47.5	5.5	294
30-34	98.0	46.8	47.2	4.0	82
35-39	(100.0)	(33.3)	(59.3)	(7.4)	27
Residence					
Rural	98.7	39.2	52.2	7.3	738
Urban	97.8	53.4	43.5	1.0	396
Education					
Non-literate	99.1	39.5	50.9	8.7	411
0-9@years	98.4	43.8	50.8	3.8	483
10 years & above	97.1	52.6	42.8	1.7	240
Religion					
Hindu	99.0	43.2	50.1	5.7	996
Muslim	99.2	48.6	49.1	1.5	109
Other	(90.9)	(45.5)	(45.5)	(0.0)	29
Caste/tribe#					
Scheduled caste	98.6	37.1	56.9	4.6	145
Scheduled tribe	100.0	27.7	62.3	9.9	160
Other backward class	99.0	48.2	45.9	4.9	461
Other	96.5	49.5	43.3	3.6	333
Standard of living index					
Low	98.8	35.5	55.4	8.0	381
Medium	97.8	42.5	50.5	4.8	423
High	98.8	56.2	40.4	2.3	331
Total	98.4	44.1	49.2	5.1	1,134

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. @ Literate women with no years of schooling are also included. . # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. ( ) Based on less than 50 unweighted cases. Total includes 6 cases in age group category 40-44 that were not shown separately.

4.9 HARYANA

4.9.1 Weight for Age of Children

In Haryana, weight was measured for 78 percent of children under 6 years of age in sampled households. On the whole, data on weight are available for over 11 thousand children in the state. Table 4.9.1 shows the percentage of children under 6 years of age classified as undernourished, as measured by weight for age index by some selected background characteristics. In the following discussion, children whose weights in SD unit (Z score) is less than –3 would be referred to as 'severely underweight' and those with weight in SD unit less than –2 would be referred to simply as 'underweight'. More than one-tenth (13 percent) of the children in Haryana are severely underweight and more than one-third (36 percent) of the children are underweight. The proportion of undernourished children increases rapidly with the child's age upto 12-23 months and shows a decrease thereafter. Nearly one-fourth (23 percent) of the children in the age group 12-23 months are severely underweight whereas more than two-fifth (44 percent) of the children in the same age group are underweight. By age 48-71 months the corresponding figures for severely underweight and underweight children stabilize at 8 and 30 percent, respectively.

Birth order of the child can also influence the nutritional status of the child. The second round of the RCH survey reveals that young children in families with six or more siblings are most likely to be underweight. Whereas 11 and 31 percent of children of first birth order are severely underweight and underweight respectively, the corresponding figures among children of birth order six or more are 23 and 52 percent, respectively. The observed sex differential both in severe underweight and underweight children is marginal. The extent of underweight children, both severe underweight and underweight, is higher in rural areas compared to that in urban areas. While around 12 and 32 percent children in urban areas are severely underweight and underweight, the corresponding figures for rural areas are 14 and 37 percent respectively.

Children's nutritional status is also expected to be influenced by mother's educational attainment. Children whose mothers are non-literate are more likely to be severely underweight as compared to children whose mothers have ten or more years of schooling. A similar pattern is also found in the case of underweight children. The percentage of underweight children is 41 among non-literate mothers while it is 27 among mothers with ten or more years of schooling.

The results of the RCH survey show that Muslim children tend to be more underweight than Hindu children. The percentage of underweight children among Hindus and Muslims is respectively 35 and 52 percent. Children from scheduled tribe have the highest percentage of both severely underweight and underweight cases (16 and 44 percent, respectively), whereas children belonging to the 'other castes' category are relatively better off than others. As expected, household's standard of living index (SLI) is strongly correlated with the malnourishment of children as reflected through the weight for age anthropometric measure.

Table 4.9.1 WEIGHT FOR AGE OF CHILDREN

Percentage of children (age 0-71 months) classified as undernourished by weight for age anthropometric measure of nutritional status according to some selected background characteristics, Haryana, 2002-04

Background characteristic	Weight for age		Weighted number of children
	Percentage Below – 3 SD	Percentage Below – 2 SD[1]	
Age of child (in months)			
0-5	1.7	12.0	721
6-11	21.0	42.6	949
12-23	22.7	43.5	1,750
24-47	14.9	40.9	3,984
48-71	8.1	29.6	4,182
Birth order			
1	11.0	31.3	3,220
2-3	13.3	35.4	4,940
4-5	15.2	42.7	1,661
6+	22.6	51.6	567
Mother's not interviewed	12.5	30.2	1,198
Sex of the child			
Male	14.4	38.1	6,389
Female	11.9	32.5	5,198
Residence			
Rural	13.7	36.7	8,685
Urban	12.1	32.3	2,902
Mother's education			
Non-literate	15.8	41.3	4,479
0-9@years	13.3	35.9	3,466
10 years & above	9.2	27.2	2,437
Mother's not interviewed	12.5	30.3	1,205
Religion			
Hindu	12.6	34.6	10,036
Muslim	23.2	51.5	986
Sikh	8.3	25.6	517
Other	(4.5)	(25.0)	48
Caste/tribe#			
Scheduled caste	14.4	36.8	2,783
Scheduled tribe	16.0	43.9	80
Other backward class	14.7	38.1	3,959
Other	11.5	32.6	4,763
Standard of living index			
Low	18.2	45.0	2,479
Medium	13.4	35.9	5,162
High	10.2	29.2	3,947
Total	13.3	35.6	11,587

Note: This index is expressed in standard deviation units (SD) from the median of the International Reference Population. [1]Includes children who are below – 3 SD from the International Reference Population median. Total includes 54 cases with missing information on birth order and 18 cases in mother's education and 4 cases in standard of living that were not shown separately. @ Literate mothers with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases.

More than one-sixth (18 percent) of the children belonging to households of lower standard of living are severely underweight and around two-fifth of the children in the same category are underweight. Whereas the corresponding figures for children belonging to high standard of living households are 10 and 29 percent, respectively.

Of the 19 districts in the state, in 6 districts the percentage of underweight children in less than 30, in 12 districts their percentage is between 30 and 50, and in 1 district their percentage is more than 50. Southern part of the state shows high prevalence of underweight children.

4.9.2 Anaemia among Children, Adolescent Girls, and Pregnant Women

In Haryana, haemoglobin level was measured for 77 percent of children under 6 years of age in sampled households. On the whole, the data on haemoglobin level are available for over 11 thousand children in the state. Table 4.9.2 shows the percent of children aged 0-71 months classified by the degree of anaemia and by selected background characteristics. Overall, 97 percent of the children have some level of anaemia, with 39 percent who are mildly anaemic, 54 percent who are moderately anaemic and 5 percent who are severely anaemic. Certain background characteristics of children show strong association with the level of anaemia. Some of them are: children aged 12-23 months (98 percent), children of higher birth order, more specifically, children of order six or more (99 percent), female children (97 percent), children who are severely underweight (98 percent), children from rural areas (98 percent), children of non-literate mothers (98 percent), Muslim children (99 percent), children of schedule castes (98 percent) and children belonging to households characterized by low standard of living (98 percent). But even in the socio-economic groups with the lowest level of anaemia, over ninety percent of children are anaemic. On the other hand, in no socio-economic group the prevalence of severe anaemia is more than six percent.

Of the 19 districts in the state, in 4 districts their percentage is between 35 and 50, and in 15 districts their percentage is more than 50. Districts with high prevalence of anaemia among children are situated in most parts of the state.

Data on anaemia levels are available for more than 8 thousand adolescent girls aged 10-19 years who constituted 71 percent of the sample. Table 4.9.3 shows anaemia levels for adolescent girls by selected background characteristics. In Haryana, 99 percent of adolescent girls have any anaemia. Thirteen percent of them are mildly anaemic, 46 percent are moderately anaemic and 40 percent are having severe anaemia. It has been found from the survey results that except mild anaemia and moderate anaemia the percentage of girls in the remaining two categories of anaemia diminishes marginally with the increase in age from 10-14 to 15-19 years. Except severe anaemia and any anaemia the occurrence of anaemia in the other categories is found to be higher in urban areas than in rural areas. The prevalence of anaemia does not vary much with the educational attainment of girls. The level of anaemia is higher among Muslim adolescent girls (100 percent).

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Adolescent girls from 'other castes' are more likely to suffer from any anaemia. The adolescent girls from households with low standard of living are slightly more likely to be anaemic.

Of the 19 districts in the state, in 2 districts their percentage is between 50 and 75, and in 17 districts their percentage is more than 75. Districts with high prevalence of anaemia among adolescent girls are situated mainly in west and eastern parts of the state.

Haemoglobin levels were measured for more than 800 pregnant women aged 15-44 years who constituted 51 percent of the sample. Table 4.9.4 shows the anaemia status among pregnant women according some selected background characteristics. Around 97 percent of the pregnant women in Haryana are suffering from some anaemia. Among pregnant women, 41 percent have mild anaemia, 53 percent who have moderate anaemia and 3 percent have severe anaemia. Thus, although levels of any anaemia among pregnant women and adolescent girls are about the same, the prevalence of severe anaemia is substantially higher in adolescent girls (40 percent) than in pregnant women (3 percent). This may be because more stringent cut-off level for severe anaemia has been used in the case of adolescent girls (8 g/dl) than in the case of pregnant women (5 g/dl). Table 4.2.4 clearly shows that percentage of pregnant women with any anaemia rises steadily with the increase in the age of the pregnant women from 95 percent for the age group 15-19 to 99 percent in the age group 30-34. Women, whether from rural or urban areas, are equally likely to experience any anaemia. The prevalence of anaemia decreases marginally with the level of educational attainment of the pregnant women. The level of anemia does not show variation with religion of the pregnant women. Pregnant women among other backward class are more prone to be anaemic (99 percent) among all the caste/tribe categories. As expected, standard of living is negatively associated with the anaemia status of the pregnant women. But the effect is marginal. Around 99 percent pregnant women belonging to poor families are anaemic compared to 96 percent among women belonging to households with higher standard of living.

Table 4.9.2 ANAEMIA AMONG CHILDREN

Percentage of children (age 0-71 months) classified as having iron-deficiency anaemia by degree of anaemia and by selected background characteristics, Haryana, 2002-04

Background characteristic	Parentage of children with any anaemia	Percentage of children with			Weighted number of children
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age of child (in months)					
0-5	96.9	33.3	59.1	4.5	699
6-11	97.1	30.4	60.6	6.0	905
12-23	98.0	31.3	59.4	7.2	1,697
24-47	97.3	36.8	55.4	5.1	3,863
48-71	96.9	46.0	48.2	2.8	4,063
Birth order					
1	96.6	40.4	52.5	3.7	3,109
2-3	97.2	39.7	53.2	4.2	4,800
4-5	98.5	36.3	55.6	6.6	1,611
6+	98.5	27.4	63.7	7.4	549
Mother's not interviewed	97.0	37.1	55.1	4.8	1,157
Sex of the child					
Male	97.1	39.2	53.9	4.1	6,181
Female	97.4	37.8	54.3	5.3	5,045
Weight for age of children					
Normal	96.8	41.2	51.6	4.0	7,261
Below – 2 SD[1]	98.1	33.8	58.5	5.8	3,966
Below – 3 SD	98.4	30.9	60.6	6.9	1,491
Residence					
Rural	97.5	36.4	56.1	5.0	8,423
Urban	96.6	45.1	48.1	3.4	2,803
Mother's education					
Non-literate	97.5	34.4	57.4	5.7	4,343
0-9@years	97.6	40.4	53.1	4.2	3,371
10 years & above	96.3	44.2	48.8	3.3	2,349
Mother's not interviewed	97.0	37.2	55.0	4.8	1,164
Religion					
Hindu	97.0	39.6	53.0	4.5	9,737
Muslim	99.4	26.4	66.2	6.8	948
Sikh	97.9	42.0	52.1	3.8	496
Other	(97.6)	(40.5)	(54.8)	(2.4)	45
Caste/tribe#					
Scheduled caste	97.6	36.7	55.4	5.5	2,696
Scheduled tribe	98.1	29.9	62.0	6.3	80
Other backward class	97.9	37.1	56.1	4.7	3,845
Other	96.5	41.0	51.4	4.0	4,604
Standard of living index					
Low	98.1	33.7	58.3	6.0	2,406
Medium	97.1	36.9	55.4	4.8	5,000
High	97.0	43.8	49.6	3.6	3,821
Total	97.2	38.6	54.1	4.6	11,227

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 -7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. [1] Includes children who are below – 3 SD from the International Reference median. Total includes 54, 104, 10 cases with missing information on birth order, sex of child, mother's education respectively and 4 cases in standard of living index that were not shown separately. @ Literate mothers with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases ( ) Based on less than 50 unweighted cases.

Table 4.9.3 ANAEMIA AMONG ADOLESCENT GIRLS

Percentage of adolescent girls[1] (age 10-19 years) classified as having iron-deficiency anaemia by degree of anaemia and by selected background characteristics, Haryana, 2002-04

Background characteristic	Parentage of adolescent with any anaemia	Percentage of adolescent with			Number of adolescent girls
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
10-14	99.3	13.6	46.6	39.1	5,187
15-19	99.4	12.5	45.1	41.8	3,544
Marital status					
Currently not married	99.4	13.2	46.0	40.2	8,709
Residence					
Rural	99.6	12.6	45.7	41.3	6,161
Urban	98.9	14.5	46.6	37.7	2,570
Education					
Non-literate	99.6	8.0	43.8	47.9	728
0-9@years	99.3	13.6	46.2	39.5	6,280
10 years & above	99.3	13.7	45.9	39.7	1,724
Religion					
Hindu	99.3	13.6	45.9	39.9	7,815
Muslim	100.0	6.2	45.7	48.1	500
Sikh	99.5	14.1	47.4	38.1	394
Caste/tribe#					
Scheduled caste	99.3	11.5	42.4	45.4	2,002
Scheduled tribe	100.0	17.1	53.9	29.0	51
Other backward class	99.5	11.1	47.9	40.5	2,706
Other	99.3	15.4	46.3	37.6	3,967
Standard of living index					
Low	99.5	11.6	47.0	40.9	1,597
Medium	99.4	12.5	44.8	42.1	3,890
High	99.3	14.8	46.8	37.7	3,243
Total	99.4	13.2	46.0	40.2	8,731

Note: Haemoglobin level between 10.0 - 11.9 g/dl is mild anaemia, 8.0 - 9.9 g/dl is moderate anaemia and below 8.0 g/dl is severe anaemia. [1] Includes currently married women age 15-19 years who were not pregnant at the time of survey. @ Literate adolescent with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. Total includes 22 cases of Other religions that were not shown separately. ( ) Based on less than 50 unweighted cases.

Table 4.9.4 ANAEMIA AMONG PREGNANT WOMEN

Percentage of pregnant women (age 15-44 years) classified as having iron-deficiency anaemia by degree of anaemia and by selected background characteristics, Haryana, 2002-04

Background characteristic	Parentage of pregnant women with any anaemia	Percentage of pregnant women with			Number of pregnant women
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
15-19	94.5	38.7	52.6	3.1	155
20-24	96.4	43.5	48.7	4.2	438
25-29	98.1	38.8	58.0	1.3	179
30-34	99.0	32.2	64.1	2.6	61
Residence					
Rural	96.9	38.4	54.4	4.1	620
Urban	96.0	46.6	48.3	1.1	223
Education					
Non-literate	98.9	34.4	60.5	4.1	302
0-9@years	95.5	38.5	52.7	4.3	308
10 years & above	95.3	51.2	43.1	0.9	234
Religion					
Hindu	96.3	41.1	51.8	3.4	725
Muslim	100.0	32.4	64.2	3.4	71
Other	(96.1)	(43.1)	(51.0)	(2.0)	48
Caste/tribe#					
Scheduled caste	95.5	34.7	55.3	5.5	229
Other backward class	98.8	39.6	56.3	3.0	288
Other	95.5	45.4	48.0	2.1	320
Standard of living index					
Low	99.2	27.8	66.9	4.5	158
Medium	96.2	40.2	52.0	4.0	384
High	95.9	47.6	46.5	1.8	302
Total	96.7	40.5	52.8	3.3	844

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. @ Literate women with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. Total includes 17 cases in age group category 40-44, 1 case of other religion and 3 don't know cases in caste that were not shown separately. One missing case in education was not shown separately. ( ) Based on less than 50 unweighted cases.

4.10 HIMACHAL PRADESH

4.10.1 Weight for Age of Children:

In Himachal Pradesh, weight was measured for 67 percent of children under 6 years of age in sampled households. On the whole, data on weight are available about nearly 5 thousand children in the state. Table 4.10.1 shows the percentage of children under 6 years of age classified as undernourished, as measured by weight for age index by some selected background characteristics. In the following discussion, children whose weight in SD unit (Z score) is less than −3 would be referred to as 'severely underweight' and those with weight in SD unit less than −2 would be referred to simply as 'underweight'. More than one-tenth (12 percent) of the children in Himachal Pradesh are severely underweight and one third (36 percent) of the children are underweight. The proportion of undernourished children increases rapidly with the child's age upto 12-23 months and shows a decrease thereafter. Around one-fourth (19 percent) of the children in the age group 12-23 months are severely underweight whereas more than three-fifth (44 percent) of the children in the same age group are underweight. By age 48-71 months the corresponding figures for severely underweight and underweight children stabilize at 10 and 35 percent, respectively.

Birth order of the child can also influence the nutritional status of the child. The second round of the RCH survey reveals that young children in families with six or more siblings are most likely to be underweight. Whereas 10 and 36 percent of children of first birth order are severely underweight and underweight respectively, the corresponding figures among children of birth order six or more are 8 and 42 percent, respectively. The observed sex differential both in severe underweight and underweight children is marginal. The extent of underweight children, both severe underweight and underweight, is higher in rural areas compared to that in urban areas. While around 9 and 31 percent children in urban areas are severely underweight and underweight, the corresponding figures for rural areas are 13 and 37 percent respectively.

Children's nutritional status is also expected to be influenced by mother's educational attainment. Children whose mothers are non-literate are about more than twice as likely to be severely underweight as compared to children whose mothers have ten or more years of schooling. A similar pattern is also found in the case of underweight children. The percentage of underweight children is 38 among non-literate mothers while it is 30 among mothers with ten or more years of schooling.

The results of the RCH survey show that Hindu children tend to be slightly more underweight than Muslim children. The percentage of underweight children among Hindus and Muslims is respectively 37 and 30 percent. Children from other backward class have the highest percentage of both severely underweight and underweight cases (20 and 54 percent, respectively), whereas children belonging to the 'other castes' category are relatively better off than others. As expected, household's standard of living index (SLI) is strongly correlated with the malnourishment of children as reflected through the weight for age anthropometric measure.

Table 4.10.1 WEIGHT FOR AGE OF CHILDREN

Percentage of children (age 0-71 months) classified as undernourished by weight for age anthropometric matrix of nutritional status according to some selected background characteristics, Himachal Pradesh, 2002-04

Background characteristic	Weight for age		Number of children
	Percentage Below – 3 SD	Percentage Below – 2 SD[1]	
Age of child (in months)			
0-5	2.8	21.1	191
6-11	16.6	36.8	356
12-23	18.6	43.9	724
24-47	11.4	35.7	1,467
48-71	10.1	35.1	1,179
Birth order			
1	10.0	36.1	1,176
2-3	14.8	38.1	1,604
4-5	11.7	35.3	279
6+	8.3	42.0	88
Mother's not interviewed	11.9	33.3	771
Sex of the child			
Male	14.6	38.1	2,066
Female	10.0	34.6	1,851
Residence			
Rural	13.2	37.7	3,190
Urban	8.7	31.0	727
Mother's education			
Non-literate	14.0	38.1	591
0-9@years	15.6	44.1	1,243
10 years & above	8.7	30.2	1,321
Mother's not interviewed	12.3	33.4	762
Religion			
Hindu	12.8	36.8	3,710
Muslim	6.1	30.2	89
Sikh	1.6	23.3	72
Other	(18.6)	(41.2)	47
Caste/tribe#			
Scheduled caste	12.2	35.9	904
Scheduled tribe	14.7	35.4	188
Other backward class	19.6	53.7	470
Other	10.9	33.1	2,342
Standard of living index			
Low	15.1	42.4	1,066
Medium	14.3	38.0	1,680
High	7.4	28.6	1,165
Total	12.4	36.4	3,917

Note: This index is expressed in standard deviation units (SD) from the median of the International Reference Population. [1]Includes children who are below – 3 SD from the International Reference Population median. @ Literate mothers with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. Total includes 43 cases with missing information on birth order and 9 cases in standard of living that were not shown separately. ( ) Based on less than 50 unweighted cases

More than one-tenth (15 percent) of the children belonging to households of lower standard of living are severely underweight and less than half of the children in the same category are underweight. Whereas the corresponding figures for children belonging to high standard of living households are 7 and 29 percent, respectively.

Of the 12 districts in the state, in 4 districts the percentage of underweight children in less than 30, in 7 districts their percentage is between 30 and 50, and in 1 district their percentage is more than 50. Eastern part of the state shows high prevalence of underweight children.

4.10.2 Anaemia among Children, Adolescent Girls, and Pregnant Women

In Himachal Pradesh, haemoglobin level was measured for 53 percent of children under 6 years of age in sampled households. On the whole, the data on haemoglobin level are available for around three thousand children in the state. Table 4.10.2 shows the percent of children aged 0-71 months classified by the degree of anaemia and by selected background characteristics. Overall, 97 percent of the children have some level of anaemia, with 47 percent who are mildly anaemic, 48 percent who are moderately anaemic and 3 percent who are severely anaemic. Certain background characteristics of children show strong association with the level of anaemia. Some of them are: children aged 12-23 months (99 percent), children of higher birth order, more specifically, children of order six or more (95 percent), female children (97 percent), children who are severely underweight (98 percent), children from rural areas (97 percent), children of non-literate mothers (96 percent), Sikh children (99 percent), children of other backward class (100.0 percent) and children belonging to households characterized by medium standard of living (98 percent).

Of the 12 districts in the state, in 1 district the percentage of children with severe or moderate anaemia is in less than 35, in 7 districts their percentage is between 35 and 50, and in 4 districts their percentage is more than 50. Districts with high prevalence of anaemia among children are situated mainly in western part of the state.

Data on anaemia levels are available for over two thousand adolescent girls aged 10-19 years who constituted 36 percent of the sample. Table 4.10.3 shows anaemia levels for adolescent girls by selected background characteristics. In Himachal Pradesh, 99 percent of adolescent girls have any anaemia. Twenty one percent of them are mildly anaemic, 47 percent are moderately anaemic and 31 percent are having severe anaemia. It has been found from the survey results that except mild anaemia, the percentage of girls in the remaining three categories of anaemia diminishes marginally with the increase in age from 10-14 to 15-19 years. The incidence of any anaemia is (99 percent) among adolescent girls who are currently unmarried. Except severe anaemia, the occurrence of anaemia in the other categories is found to be higher in urban areas than in rural areas. The prevalence of anaemia does not vary much with the educational attainment of girls. The level of anaemia is does not vary with religion of adolescent girls. Adolescent girls from 'other backward class' are more likely to suffer from any anaemia.

It is also interesting to note that adolescent girls from households with higher standard of living are slightly more likely to be anaemic.

Of the 12 districts in the state, in 1 district the percentage of adolescent girls with severe or moderate anaemia is in less than 50, in 5 districts their percentage is between 50 and 75, and in 6 districts their percentage is more than 75. Districts with high prevalence of anaemia among adolescent girls are situated mainly in western part of the state.

Haemoglobin levels were measured for nearly 346 pregnant women aged 15-44 years who constituted 60 percent of the sample. Table 4.2.4 shows the anaemia status among pregnant women according some selected background characteristics. Around 97 percent of the pregnant women in Himachal Pradesh are suffering from some anaemia. Among pregnant women, 49 percent have mild anaemia, 44 percent who have moderate anaemia and 4 percent have severe anaemia. This may be because more stringent cut-off level for severe anaemia has been used in the case of adolescent girls (8 g/dl) than in the case of pregnant women (5 g/dl). Table 4.10.4 clearly shows that percentage of pregnant women with any anaemia rises steadily with the increase in the age of the pregnant women from 96 percent for the age group 20-24 to 97 percent in the age group 25-29. Women, whether from rural or urban areas, are equally likely to experience any anaemia. The prevalence of anaemia decreases marginally with the level of educational attainment of the pregnant women. The level of anemia does not show variation with religion of the pregnant women. Pregnant women among other backward class are more prone to be anaemic (100.0 percent) among all the caste/tribe categories. As expected, standard of living is negatively associated with the anaemia status of the pregnant women. But the effect is very marginal. Around 97 percent pregnant women belonging to poor families are anaemic compared to 96 percent among women belonging to households with higher standard of living.

Table 4.10.2 ANAEMIA AMONG CHILDREN

Percentage of children (age 0-71 months) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Himachal Pradesh, 2002-04

Background characteristic	Parentage of children with any anaemia	Percentage of children with			Number of children
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age of child (in months)					
0-5	98.9	41.7	57.2	0.0	113
6-11	98.7	36.4	60.6	1.8	226
12-23	98.7	40.3	55.1	3.3	543
24-47	98.0	45.6	49.3	3.1	1,088
48-71	95.5	55.5	38.2	1.8	1,015
Birth order					
1	98.0	50.2	46.0	1.9	931
2-3	97.6	44.1	50.6	2.8	1,238
4-5	96.3	43.3	50.7	2.3	225
6+	95.1	49.4	43.1	2.5	69
Mother's not interviewed	96.4	50.3	43.4	2.8	521
Sex of the child					
Male	97.4	48.1	46.1	3.1	1,594
Female	97.3	46.3	49.3	1.7	1,380
Weight for age of children					
Normal	97.0	50.2	44.2	2.7	1,921
Below – 2 SD[1]	98.0	41.7	54.2	2.1	1,063
Below – 3 SD	98.3	38.2	57.3	2.8	363
Residence					
Rural	97.3	46.3	48.4	2.6	2,474
Urban	97.6	51.4	44.3	1.9	509
Mother's education					
Non-literate	95.8	46.2	45.8	3.8	511
0-9@years	97.7	39.8	54.6	3.3	961
10 years & above	98.3	53.6	43.9	0.8	1,000
Mother's not interviewed	96.5	49.4	44.2	2.8	512
Religion					
Hindu	97.3	47.3	47.5	2.4	2,831
Muslim	97.5	35.2	56.2	6.1	69
Sikh	98.8	46.0	52.8	0.0	58
Other	(98.6)	(54.7)	(41.2)	(2.8)	26
Caste/tribe#					
Scheduled caste	96.7	45.2	49.0	2.6	685
Scheduled tribe	98.5	45.6	51.1	1.8	141
Other backward class	100.0	31.3	63.9	4.8	363
Other	97.0	51.4	43.6	2.0	1,790
Standard of living index					
Low	95.7	44.0	48.5	3.2	862
Medium	98.1	46.9	48.8	2.4	1,321
High	97.9	50.9	45.2	1.9	801
Total	97.4	47.2	47.7	2.5	2,984

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. [1] Includes children who are below – 3 SD from the International Reference median. @ Literate mothers with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. ( ) Based on less than 50 unweighted cases. Total includes 10 cases and 1 case with missing information on sex of child and standard of living index respectively that were not shown separately.

Table 4.10.3 ANAEMIA AMONG ADOLESCENT GIRLS

Percentage of adolescent girls[1] (age 10-19 years) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Himachal Pradesh, 2002-04

Background characteristic	Parentage of adolescent with any anaemia	Percentage of adolescent with			Number of adolescent girls
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
10-14	98.9	20.6	48.4	29.9	1181
15-19	99.3	20.9	46.4	32.0	1162
Marital status					
Currently not married	99.1	20.7	47.5	30.9	2336
Residence					
Rural	98.9	21.9	46.0	31.0	1823
Urban	99.8	16.5	52.5	30.8	519
Education					
Non-literate	(96.6)	(20.7)	(44.8)	(31.0)	32
0-9@years	99.3	20.2	47.6	31.5	1643
10 years & above	98.9	22.5	47.4	29.0	668
Religion					
Hindu	99.1	21.1	47.5	30.6	2256
Other	98.9	11.4	46.5	41.0	87
Caste/tribe#					
Scheduled caste	99.7	21.8	46.4	31.6	538
Scheduled tribe	100.0	16.9	57.1	26.0	102
Other backward class	100.0	10.4	52.1	37.5	253
Other	98.6	22.5	46.6	29.6	1443
Standard of living index					
Low	98.5	26.4	44.5	27.6	575
Medium	99.2	18.3	47.8	33.1	1067
High	99.5	19.8	49.3	30.5	701
Total	99.1	20.7	47.4	31.0	2343

Note: Haemoglobin level between 10.0 - 11.9 g/dl is mild anaemia, 8.0- 9.9 g/dl is moderate anaemia and below 8.0 g/dl is severe anaemia. [1] Includes currently married women age 15-19 years who were not pregnant at the time of survey. @ Literate adolescent with no years of schooling are also included# Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. Total includes 7 currently married adolescent girls that were not shown separately. ( ) Based on less than 50 cases.

Table 4.10.4 ANAEMIA AMONG PREGNANT WOMEN

Percentage of pregnant women (age 15-44 years) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Himachal Pradesh, 2002-04

Background characteristic	Parentage of pregnant women with any anaemia	Percentage of pregnant women with			Number of pregnant women
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
20-24	96.5	52.5	38.9	5.1	199
25-29	97.4	41.1	53.6	2.7	107
Residence					
Rural	97.4	48.0	45.4	4.0	266
Urban	96.5	53.3	39.4	3.7	80
Education					
Non-literate	(100.0)	(29.4)	(66.7)	(3.9)	39
0-9@years	96.4	50.3	42.0	4.2	114
10 years & above	97.0	52.0	41.3	3.7	193
Religion					
Hindu	97.0	50.6	42.3	4.1	322
Other	(100.0)	(40.0)	(55.0)	(5.0)	25
Caste/tribe#					
Scheduled caste	99.2	51.7	42.9	4.6	79
Other backward class	(100.0)	(42.4)	(54.5)	(3.0)	43
Other	95.5	51.1	40.7	3.6	203
Standard of living index					
Low	97.2	49.1	41.3	6.8	92
Medium	97.7	45.5	48.3	4.0	147
High	96.4	54.4	40.5	1.5	108
Total	97.2	49.2	44.0	4.0	346

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. @ Literate women with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. ( ) Based on less number of cases. Total includes 18,15, 5 & 1 cases in age group category 15-19, 30-34,35-39 & 40-44 and 18 & 3 cases in scheduled tribe & don't know caste that were not shown separately.

4.11 JAMMU AND KASHMIR

4.11.1 Weight for Age of Children:

In Jammu and Kashmir, weight was measured for 52 percent of children under 6 years of age in sampled households. On the whole, data on weight are available for about two thousand children in the state. Table 4.11.1 shows the percentage of children under 6 years of age classified as undernourished, as measured by weight for age index by some selected background characteristics. In the following discussion, children whose weight in SD unit (Z score) is less than –3 would be referred to as 'severely underweight'. Only seven percent of children in Jammu and Kashmir are severely underweight and less than one-fifth (22 percent) of the children are underweight. The proportion of undernourished children increases rapidly with the child's age upto 12-23 months and shows a decrease thereafter. Around one-fifth (19 percent) of the children in the age group 12-23 months are severely underweight whereas more than two fifth (43 percent) of the children in the same age group are underweight. By the age 48-71 months the corresponding figures for severely and underweight children stabilize at 5 and 17 percent respectively.

Birth order of the child can also influence the nutritional status of the child. The second round of RCH Survey reveals that young children in families with four to five siblings are most likely to be underweight. Whereas 5 and 22 percent of children of first birth order are severely underweight and underweight respectively, the corresponding figures among children of birth order four to five are 8 and 21 percent respectively. The observed sex differential both in severe underweight and underweight children is marginal. The extent of underweight children, both severe underweight and underweight, is higher in rural areas compared to that in urban areas. While around 6 and 20 percent children in urban areas are severely underweight and underweight, the corresponding figures for rural areas are 7 and 23 percent respectively.

Children's nutritional status is expected to be influenced by mother's educational attainment. Children whose mothers are non-literate are about more than six percent as likely to be severely underweight as compared to nine percent of children whose mothers have ten years or more years of schooling. A similar pattern is also found in the case of underweight children. The percentage of underweight children is 24 among non-literate mothers while it is 19 among mothers with ten or more years of schooling.

The results of the RCH survey show that Muslim children tend to be more underweight than children of other religions. The percentage of underweight children among other religions and Muslims is respectively 12 and 23 percent. Children from other castes have the highest percentage of both severely and underweight cases (8 and 25 percent, respectively), where as children belonging to the Scheduled tribes are relatively better off than others. As expected, household's standard of living index (SLI) is strongly correlated with the malnourishment of children as reflected through the weight for age anthropometrics measure. More than (10 percent) of the children belonging to households of lower standard of living are severely underweight and more than one-fifth of the children in the same category are underweight.

Table 4.11.1 WEIGHT FOR AGE OF CHILDREN

Percentage of children (age 0-71 months) classified as undernourished by weight for age anthropometric matrix of nutritional status according to some selected background characteristics, Jammu & Kashmir, 2002-04

Background characteristic	Weight for age		Number of children
	Percentage Below – 3 SD	Percentage Below – 2 SD[1]	
Age of child (in months)			
0-5	(3.2)	(9.7)	31
6-11	16.6	31.2	62
12-23	19.3	43.1	83
24-47	9.4	32.2	528
48-71	4.9	16.5	1,252
Birth order			
1	5.3	22.2	472
2-3	7.3	23.9	839
4-5	8.0	21.1	294
6+	6.2	24.0	68
Mother's not interviewed	8.5	18.4	284
Sex of the child			
Male	7.4	23.1	1,011
Female	6.7	21.3	945
Residence			
Rural	7.2	22.7	1,582
Urban	6.2	20.4	374
Mother's education			
Non-literate	6.9	24.3	1,276
0-9@years	5.0	17.7	195
10 years & above	7.8	19.0	186
Mother's not interviewed	8.5	18.5	299
Religion			
Muslim	7.1	22.8	1,871
Other	5.0	11.6	85
Caste/tribe#			
Scheduled caste	(7.3)	(19.5)	46
Scheduled tribe	0.0	6.3	104
Other backward class	7.1	18.6	417
Other	7.6	24.7	1,382
Standard of living index			
Low	9.3	24.2	322
Medium	6.1	21.1	1,356
High	9.1	25.8	279
Total	7.0	22.3	1,956

Note: This index is expressed in standard deviation units (SD) from the median of the International Reference Population. [1]Includes children who are below – 3 SD from the International Reference Population median. @ Literate mothers with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. ( ) Based on less than 50 unweighted cases.

Whereas the corresponding figures for children belonging to high standard of living households are 7 and 21 percent, respectively.

Of the 7 districts in the state, in 5 districts the percentage of underweight children in less than 30 and 2 districts their percentage is between 30 and 50. Western part of the state shows moderate prevalence of underweight children.

4.11.2 Anaemia among Children, Adolescent Girls, and Pregnant Women

In Jammu and Kashmir, haemoglobin level was measured for 48 percent of children under 6 year of age in the sampled households. On the whole, the data on haemoglobin level are available for over 1,673 children in the state. Table 4.11.2 shows the percent of children aged 6-71 months classified by the degree of anaemia and by selected background characteristics. Overall, 53 percent of the children have some level of anaemia, with 45 percent who are mildly anaemic, 8 percent who are moderately anaemic and less than one percent who are severely anaemic. Certain background characteristics of children show strong association with the level of anaemia. Some of them are: children aged 6-11 months (68 percent), children of higher birth order, more specifically, children of order six or more (63 percent), female children (56 percent), children who are severely underweight (55 percent), children from rural areas (51 percent), children of non-literate mothers (53 percent), other religion children (64 percent), children of scheduled tribe (78 percent) and children belonging to households characterized by medium standard of living (58 percent). But even in the socio-economic groups with the lowest level of anaemia, around one-third of children are anaemic. On the other hand, in no socio-economic group the prevalence of severe anaemia is less than one percent.

Of the 7 districts in the state, in 6 districts the percentage of children with severe or moderate anaemia is in less than 35 and 1 district their percentage is between 35 and 50. Districts with moderate prevalence of anaemia among children are situated mainly in south-central part of the state.

Data on anaemia levels are available for over 3 thousand adolescent girls aged 10-19 years who constituted 53 percent of the sample. Table 4.11.3 shows anaemia levels for adolescent girls by selected background characteristics. In Jammu and kashmir, 65 percent of adolescent girls have any anaemia. Thirty nine percent of them are mildly anaemic, 19 percent are moderately anaemic and over 7 percent are having severe anaemia. It has been found from the survey results that the percentage of girls in the all categories of anaemia increases with the increase in age from 10-14 to 15-19 years. The incidence of any anaemia (65 percent) among adolescent girls who are currently unmarried. Except severe anaemia, the occurrence of anaemia in the other two categories is found to be higher in urban areas than in rural areas. The prevalence of anaemia does not vary much with the educational attainment of girls. The level of anaemia is higher among other religion adolescent girls (92 percent). Adolescent girls from 'Scheduled tribe' are more likely to suffer from any anaemia. It is also interesting to note that adolescent girls from households with higher standard of living are slightly more likely to be anaemic.

Of the 7 districts in the state, in 4 districts the percentage of adolescent girls with severe or moderate anaemia is in less than 50 and 3 districts their percentage is between 50 and 75. Districts with moderate prevalence of anaemia among adolescent girls are situated mainly in north and eastern parts of the state.

Haemoglobin levels were measured for nearly 90 pregnant women aged 15-44 years who constituted 65 percent of the sample. Table 4.11.4 shows the anaemia status among pregnant women according some selected background characteristics. More than 57 percent of the pregnant women in Jammu and Kashmir are suffering from some anaemia. Among pregnant women, 48 percent have mild anaemia and more than 9 percent have moderate anaemia. The level of any anaemia is low among pregnant women (57 percent) than in adolescent girls (65 percent), the prevalence of mild anaemia is higher in pregnant women (48 percent) than in adolescent girls (39 percent). This may be because more stringent cut-off level for moderate anaemia has been used in the case of pregnant women (8 g/dl) than in the case of adolescent girls (5 g/dl). Women, whether from rural or urban areas, are equally likely to experience any anaemia. Table 4.11.4 clearly shows that percentage of women with any anaemia declines steadily with the increase in the age of the pregnant women from 78 percent for the age group 25-29 to 57 percent in the age group 30-34. However, since these figures are based on very few cases of less than 50 observations, these should be used and interpreted cautiously.

Table 4.11.2 ANAEMIA AMONG CHILDREN

Percentage of children (age 0-71 months) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Jammu & Kashmir, 2002-04

Background characteristic	Parentage of children with any anaemia	Percentage of children with			Number of children
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age of child (in months)					
6-11	68.4	59.7	8.7	0.0	54
12-23	44.9	35.1	9.8	0.0	64
24-47	59.1	50.6	8.3	0.1	481
48-71	49.3	42.3	7.0	0.0	1,194
Birth order					
1	55.1	46.4	8.7	0.0	422
2-3	50.8	44.0	6.8	0.0	788
4-5	53.8	43.5	10.0	0.3	269
6+	63.2	50.5	12.7	0.0	59
Mother's not interviewed	51.1	46.7	4.3	0.0	278
Sex of the child					
Male	48.9	42.5	6.3	0.0	931
Female	56.7	47.7	8.8	0.1	882
Weight for age of children					
Normal	54.2	46.0	8.1	0.1	1,417
Below – 2 SD[1]	47.4	41.9	5.5	0.0	399
Below – 3 SD	54.7	49.8	4.8	0.0	125
Residence					
Rural	50.5	42.3	8.1	0.0	1,453
Urban	61.5	56.1	5.4	0.0	364
Mother's education					
Non-literate	52.6	45.4	7.3	0.0	1,178
0-9@years	62.8	49.7	13.1	0.0	176
10 years & above	47.8	38.3	9.5	0.0	172
Mother's not interviewed	49.7	45.3	4.1	0.2	291
Religion					
Muslim	52.1	45.1	7.0	0.0	1,734
Other	63.7	44.6	19.1	0.0	83
Caste/tribe#					
Scheduled caste	(27.3)	(27.3)	(0.0)	(0.0)	39
Scheduled tribe	77.9	44.9	32.3	0.7	100
Other backward class	54.9	46.4	8.5	0.0	392
Other	50.7	45.2	5.5	0.0	1,279
Standard of living index					
Low	34.9	31.3	3.6	0.0	287
Medium	58.1	48.7	9.4	0.1	1,277
High	45.6	42.9	2.7	0.0	253
Total	52.7	45.1	7.5	0.0	1,817

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. [1] Includes children who are below – 3 SD from the International Reference median. @ Literate mothers with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. ( ) based on less than 50 unweighted cases. Total includes 4 cases with missing information on sex of child that was not shown separately. Total includes 23 cases in age group 0-5 that were not shown separately.

Table 4.11.3 ANAEMIA AMONG ADOLESCENT GIRLS

Percentage of adolescent girls[1] (age 10-19 years) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Jammu & Kashmir, 2002-04

Background characteristic	Parentage of adolescent with any anaemia	Percentage of adolescent with			Number of adolescent girls
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
10-14	63.9	38.5	19.2	6.1	1,514
15-19	66.1	39.8	19.5	6.8	1,861
Marital status					
Currently not married	65.0	39.2	19.3	6.5	3,366
Residence					
Rural	61.1	36.6	18.0	6.5	2,424
Urban	75.2	45.8	22.8	6.6	951
Education					
Non-literate	63.3	35.4	20.4	7.5	515
0-9@years	64.5	39.7	18.5	6.3	2,037
10 years & above	67.5	40.2	20.8	6.5	824
Religion					
Muslim	64.2	39.5	18.7	6.0	3,249
Buddhist	85.6	28.4	37.6	19.6	76
Other	92.3	39.2	32.7	20.4	50
Caste/tribe#					
Scheduled caste	53.5	39.1	10.8	3.6	64
Scheduled tribe	82.8	26.6	34.4	21.8	175
Other backward class	63.4	30.9	23.8	8.8	660
Other	64.5	42.4	17.3	4.9	2,466
Standard of living index					
Low	49.6	34.6	11.2	3.8	426
Medium	66.0	38.8	19.7	7.5	2,406
High	73.0	44.6	24.2	4.2	543
Total	65.1	39.2	19.4	6.5	3,375

Note: Haemoglobin level between 10.0 - 11.9 g/dl is mild anaemia, 8.0 - 9.9 g/dl is moderate anaemia and below 8.0 g/dl is severe anaemia. [1] Includes currently married women age 15-19 years who were not pregnant at the time of survey. @ Literate adolescent with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. Total includes 7 currently married adolescent girls and 4 Hindus in religion that were not shown separately.

Table 4.11.4 ANAEMIA AMONG PREGNANT WOMEN

Percentage of pregnant women (age 15-44 years) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Jammu and Kashmir, 2002-04

Background characteristic	Parentage of pregnant women with any anaemia	Percentage of pregnant women with		Number of pregnant women
		Mild anaemia	Moderate anaemia	
Age (in years)				
25-29	(76.7)	(56.7)	(20.0)	31
30-34	(56.8)	(48.6)	(8.1)	37
Residence				
Rural	57.6	47.7	10.0	82
Education				
Non-literate	58.4	48.2	10.2	87
Religion				
Muslim	56.5	48.0	8.4	100
Caste/tribe#				
Other	52.8	47.3	5.5	72
Standard of living index				
Medium	59.9	49.1	10.8	80
Total	57.4	48.1	9.3	102

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. @ Literate women with no years of schooling are also included. # Total figure may not add to N due to do not and missing cases. Total includes 4,20 &9 cases in age group 15-19, 20-24 & 35-39 category, 20 urban cases, 7 & 8 cases in education category 0-9 years & 10and above, 2 cases in other religion, 3,5,& 20 SC, ST & other backward class cases in caste and 16 & 7 cases in low & high SLI that were not shown separately. ( ) Based on less number of cases

4.12 JHARKHAND

4.12.1 Weight for Age of Children:

In Jharkhand, weight was measured for 64 percent of children under 6 years of age in sampled households. On the whole, data on weight are available for over 10 thousand children in the state. Table 4.12.1 shows the percentage of children under 6 years of age classified as undernourished, as measured by weight for age index by some selected background characteristics. In the following discussion, children whose weight in SD unit (Z score) is less than -3 would be referred to as 'severely underweight' and those with weights in SD unit less than -2 would be referred to simply as 'underweight'. More than one-fifth (21 percent) of the children in Jharkhand are severely underweight and more than half (52 percent) of the children are underweight. The proportion of undernourished children increases rapidly with the child's age up to 12-23 months and shows a decrease thereafter. More than one-fourth (27 percent) of the children in the age group 12-23 months are severely underweight whereas more than three-fifth (61 percent) of the children in the same age group are underweight. By age 48-71 months the corresponding figures for severely underweight and underweight children stabilize at 17 and 54 percent, respectively.

Birth order of the child can also influence the nutritional status of the child. The second round of the RCH survey reveals that young children in families with six or more siblings are most likely to be underweight. Whereas 18 and 49 percent of children of first birth order are severely underweight and underweight respectively, the corresponding figures among children of birth order six or more are 27 and 58 percent, respectively. The observed sex differential both in severe underweight and underweight children is marginal. The extent of underweight children, both severe underweight and underweight, is higher in rural areas compared to that in urban areas. While around 14 and 41 percent children in urban areas are severely underweight and underweight, the corresponding figures for rural areas are 24 and 57 percent respectively

Children's nutritional status is also expected to be influenced by mother's educational attainment. Children whose mothers are non-literate are about more than thrice as likely to be severely underweight as compared to children whose mothers have ten or more years of schooling. Similarly, in case of under weight, children of non-literate women are less than twice as likely to be underweight as compared to children whose mother have ten or more years of schooling. The percentage of underweight children is 58 among children of non-literate mothers while it is 33 among mothers with ten or more years of schooling.

The results of the RCH survey show that Christian children tend to be slightly more severely underweight than other religions. The percentage of underweight children among Other religions and Christian is respectively 49 and 58 percent Children from scheduled tribes have the highest percentage of severely underweight (23 percent) and Scheduled castes have the highest percentage of underweight (57 percent), whereas children belonging to the 'other castes' category are relatively better off than others.

Table 4.12.1 WEIGHT FOR AGE OF CHILDREN

Percentage of children (age 0-71 months) classified as undernourished by weight for age anthropometric matrix of nutritional status according to some selected background characteristics, Jharkhand, 2002-04

Background characteristic	Weight for age		Number of children
	Percentage Below -3 SD	Percentage Below -2 SD[1]	
Age of child (in months)			
0-5	4.5	11.6	870
6-11	21.9	46.1	699
12-23	26.8	60.7	1,572
24-47	25.6	58.2	3,682
48-71	16.7	53.5	3,555
Birth order			
1	17.6	48.7	2,564
2-3	19.6	50.9	3,937
4-5	25.9	58.3	1,961
6+	26.9	58.4	993
Mother's not interviewed	17.6	48.3	924
Sex of the child			
Male	21.6	53.9	5,353
Female	19.9	50.4	5,026
Residence			
Rural	23.6	56.6	7,413
Urban	13.5	41.4	2,966
Mother's education			
Non-literate	25.6	57.8	5,890
0-9@years	16.1	49.6	2,337
10 years & above	8.5	33.4	1,177
Mother's not interviewed	17.1	47.8	974
Religion			
Hindu	20.5	51.8	8,361
Muslim	22.0	53.5	1,543
Christian	20.3	57.9	342
Other	25.2	48.7	133
Caste/tribe#			
Scheduled caste	22.0	56.8	1,502
Scheduled tribe	23.4	55.1	2,496
Other backward class	21.2	52.8	4,923
Other	12.9	40.5	1,429
Standard of living index			
Low	24.6	57.6	7,273
Medium	13.3	43.9	1,885
High	9.3	33.1	1,220
Total	20.7	52.2	10,379

Note: This index is expressed in standard deviation units (SD) from the median of the International Reference Population. [1]Includes children who are below - 3 SD from the International Reference Population median. @ Literate mothers with no years of schooling are also included. . # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases.

As expected, household's standard of living index (SLI) is strongly correlated with the malnourishment of children as reflected through the weight for age anthropometric measure. Around one-fourth (25 percent) of the children belonging to households of lower standard of living are severely underweight and more than half of the children in the same category are underweight. Whereas the corresponding figures for children belonging to high standard of living households are 9 and 33 percent, respectively.

Of the 18 districts in the state, in 6 districts their percentage is between 30 and 50, and in 12 districts their percentage is more than 50. South and western parts of the state shows high prevalence of underweight children.

4.12.2 Anaemia among Children, Adolescent Girls, and Pregnant Women

In Jharkhand, haemoglobin level was measured for 49 percent of children under 6 years of age in sampled households. On the whole, the data on haemoglobin level are available for over 8 thousand children in the state. Table 4.12.2 shows the percent of children aged 0-71 months classified by the degree of anaemia and by selected background characteristics. Overall, 98 percent of the children have some level of anaemia, with 50 percent who are mildly anaemic, 41 percent who are moderately anaemic and more than 1 percent who are severely anaemic. Certain background characteristics of children show strong association with the level of anaemia. Some of them are: children aged 12-23 months (99 percent), children of higher birth order, more specifically, children of order six or more (99 percent), children who are severely underweight (99 percent), children from rural areas (98 percent), children of non-literate mothers (98 percent), Christian children (99 percent), children of schedule tribes (99 percent) and children belonging to households characterized by low standard of living (98 percent). But even in the socio-economic groups with the lowest level of anaemia, over two-thirds of children are anaemic. On the other hand, in no socio-economic group the prevalence of severe anaemia is more than two percent.

Of the 18 districts in the state, in 4 districts the percentage of children with severe or moderate anaemia is in less than 35, in 9 districts their percentage is between 35 and 50, and in 5 districts their percentage is more than 50. Districts with high prevalence of anaemia among children are situated mainly in northern part of the state.

Data on anaemia levels are available for more than five thousand adolescent girls aged 10-19 years who constituted 43 percent of the sample. Table 4.12.3 shows anaemia levels for adolescent girls by selected background characteristics. In Jharkhand, 100 percent of adolescent girls have any anaemia. Nineteen percent of them are mildly anaemic, 56 percent are moderately anaemic and 24 percent are having severe anaemia. It has been found from the survey results that except mild and severe anaemia, the percentage of girls in the remaining two categories of anaemia diminishes marginally with the increase in age from 10-14 to15-19 years. The incidence of any anaemia is higher (100 percent) among adolescent girls who are currently unmarried compared to that among their married counterpart (99 percent). Except mild anaemia, the occurrence

of anaemia in the other categories is found to be higher in rural areas than in urban areas. The prevalence of anaemia does not vary much with the educational attainment of girls. The level of anaemia is higher among Christian adolescent girls (100 percent). Adolescent girls from 'scheduled tribes' are more likely to suffer from any anaemia. It is observed that the adolescent girls from the households with lower standard of living are slightly more likely to be anaemic.

Of the 18 districts in the state, in 7 districts their percentage is between 50 and 75, and in 11 districts their percentage is more than 75. Districts with high prevalence of anaemia among adolescent girls are situated in most part of the state.

Haemoglobin levels were measured for nearly 1,000 pregnant women aged 15-44 years who constituted 64 percent of the sample. Table 4.12.4 shows the anaemia status among pregnant women according some selected background characteristics. Around 98 percent of the pregnant women in Jharkhand are suffering from some anaemia. Among pregnant women, 56 percent have mild anaemia and 41 percent who have moderate anaemia and more than 9 percent have severe anaemia. Thus, although levels of any anaemia among pregnant women and adolescent girls are about the same, the prevalence of severe anaemia is substantially higher in adolescent girls (24 percent) than in pregnant women (1 percent). This may be because more stringent cut-off level for severe anaemia has been used in the case of pregnant women (8 g/dl) than in the case of adolescent (5 g/dl). Table 4.12.4 clearly shows that percentage of pregnant women with any anaemia rises steadily with the increase in the age of the pregnant women from 98 percent for the age group 15-19 to 97 percent in the age group 30-34. Place of residence is not found to be strong. The prevalence of anaemia decreases marginally with the level of educational attainment of the pregnant women. The Hindu women tend to be slightly more anaemic (98 percent) than Muslim. Pregnant women among scheduled tribes are more prone to be anaemic (98 percent) among all the caste/tribe categories. As expected, standard of living is negatively associated with the anaemia status of the pregnant women. Around 98 percent pregnant women belonging to poor families are anaemic compared to 96 percent among women belonging to households with higher standard of living.

Table 4.12.2 ANAEMIA AMONG CHILDREN

Percentage of children (age 0-71 months) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Jharkhand, 2002-04

Background characteristic	Parentage of children with any anaemia	Percentage of children with			Number of children
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age of child (in months)					
0-5	96.9	47.5	48.9	0.4	505
6-11	98.5	50.3	47.4	0.9	502
12-23	98.7	43.0	54.0	1.7	1,214
24-47	97.6	54.5	41.6	1.4	2,969
48-71	97.1	64.2	32.1	0.8	2,910
Birth order					
1	96.6	54.8	40.7	1.1	1,979
2-3	97.6	56.9	39.7	1.0	3,063
4-5	98.2	53.1	43.7	1.4	1,569
6+	98.6	53.6	42.8	2.2	747
Mother's not interviewed	97.9	59.4	38.2	0.2	742
Sex of the child					
Male	97.5	56.1	40.0	1.4	4,193
Female	97.6	55.0	41.8	0.9	3,874
Weight for age of children					
Normal	96.9	60.3	35.5	1.1	3,785
Below – 2 SD[1]	98.2	51.4	45.5	1.2	4,316
Below – 3 SD	98.5	46.6	50.0	1.9	1,721
Residence					
Rural	98.2	53.0	44.0	1.3	5,971
Urban	95.9	62.8	32.2	0.9	2,130
Mother's education					
Non-literate	98.3	52.6	44.3	1.4	4,624
0-9@years	96.9	56.6	39.5	0.8	1,879
10 years & above	94.9	65.1	28.6	1.2	827
Mother's not interviewed	97.8	60.3	37.0	0.5	771
Religion					
Hindu	97.6	55.9	40.6	1.2	6,587
Muslim	97.2	54.1	42.1	1.1	1,139
Christian	98.6	55.4	41.9	1.3	271
Other	96.4	53.0	42.9	0.5	104
Caste/tribe#					
Scheduled caste	98.3	52.7	43.3	2.3	1,166
Scheduled tribe	98.8	53.5	44.4	0.8	2,016
Other backward class	97.3	55.5	40.7	1.2	3,868
Other	95.5	63.3	31.7	0.4	1,027
Standard of living index					
Low	98.3	52.4	44.7	1.2	5,808
Medium	96.9	62.3	33.4	1.2	1,429
High	94.0	65.7	27.4	0.9	865
Total	97.6	55.6	40.9	1.2	8,101

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. [1] Includes children who are below – 3 SD from the International Reference median. @ Literate mothers with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases.

Table 4.12.3 ANAEMIA AMONG ADOLESCENT GIRLS

Percentage of adolescent girls[1] (age 10-19 years) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Jharkhand, 2002-04

Background characteristic	Parentage of adolescent with any anaemia	Percentage of adolescent with			Number of adolescent girls
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
10-14	99.6	18.8	56.9	24.0	3,153
15-19	99.3	19.6	55.1	24.5	2,347
Marital status					
Currently married	98.9	11.0	60.1	27.8	384
Currently not married	99.5	19.7	55.8	23.9	5,116
Residence					
Rural	99.6	17.1	56.3	26.3	3,338
Urban	99.2	22.3	55.9	21.0	2,162
Education					
Non-literate	99.7	13.8	57.0	28.9	1,301
0-9@years	99.4	20.2	56.3	22.9	3,595
10 years & above	99.1	24.0	53.1	22.1	603
Religion					
Hindu	99.4	19.4	55.5	24.5	4,376
Muslim	99.5	16.0	61.1	22.4	799
Christian	100.0	24.4	51.5	24.2	223
Other	98.7	18.4	55.2	25.1	101
Caste/tribe#					
Scheduled caste	99.5	16.6	57.3	25.6	651
Scheduled tribe	99.8	17.1	56.0	26.7	1,214
Other backward class	99.4	19.0	57.0	23.4	2,697
Other	99.0	23.5	53.2	22.3	930
Standard of living index					
Low	99.7	17.1	56.0	26.5	3,157
Medium	99.2	18.9	59.1	21.1	1,290
High	99.2	25.3	52.8	21.1	1,053
Total	99.5	19.1	56.1	24.2	5,500

Note: Haemoglobin level between 10.0 - 11.9 g/dl is mild anaemia, 8.0 - 9.9 g/dl is moderate anaemia and below 8.0 g/dl is severe anaemia. [1] Includes currently married women age 15-19 years who were not pregnant at the time of survey. @ Literate adolescent with no years of schooling are also included. . # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases.

Table 4.12.4 ANAEMIA AMONG PREGNANT WOMEN

Percentage of pregnant women (age 15-44 years) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Jharkhand, 2002-04

Background characteristic	Parentage of pregnant women with any anaemia	Percentage of pregnant women with			Number of pregnant women
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
15-19	97.8	58.0	39.2	0.6	233
20-24	97.8	57.5	38.7	1.6	413
25-29	97.6	52.7	44.2	0.7	188
30-34	96.8	48.8	46.4	1.6	93
35-39	(100.0)	(61.2)	(36.7)	(2.0)	44
Residence					
Rural	97.9	54.5	42.4	1.0	705
Urban	97.5	59.2	36.5	1.9	273
Education					
Non-literate	98.6	52.1	44.9	1.6	568
0-9@years	97.9	57.5	39.9	0.6	289
10 years & above	93.9	69.1	23.4	1.4	120
Religion					
Hindu	98.2	55.2	41.9	1.1	798
Muslim	96.9	60.1	33.7	3.1	129
Other	94.1	54.7	39.5	0.0	51
Caste/tribe#					
Scheduled caste	99.3	44.3	53.5	1.5	143
Scheduled tribe	98.1	50.4	46.7	1.1	251
Other backward class	97.1	57.1	38.6	1.5	430
Other	97.8	72.4	24.4	0.9	150
Standard of living index					
Low	98.2	52.8	44.0	1.4	669
Medium	97.4	58.0	38.5	0.9	186
High	96.4	68.8	26.2	1.4	122
Total	97.8	55.8	40.7	1.3	977

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. @ Literate women with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. ( ) Based on less number of cases. Total includes 7 cases in age group category 40-44 and 4 cases in don't know castes that were not shown separately.

4.13 KARNATAKA

4.13.1 Weight for Age of Children:

In Karnataka, weight was measured for 60 percent of children under 6 years of age in sampled households. On the whole, data on weight are available for around 9 thousand children in the state. Table 4.13.1 shows the percentage of children under 6 years of age classified as undernourished as measured by weight for age index by some selected background characteristics. In the following discussion, children whose weight in SD unit (Z score) is less than −3 would be referred to as 'severely underweight' and those with weight in SD unit less than −2 would be referred to simply as 'underweight'. Around 15 percent of the children in Karnataka are severely underweight and more than two-fifth 45 percent of the children are underweight. The proportion of undernourished children increases rapidly with the child's age up to 12-23 months and shows a decrease thereafter. More than one-fifth (21 percent) of the children in the age group 12-23 months are severely underweight whereas more than two-fifth (48 percent) of the children in the same age group are underweight. By age 48-71 months the corresponding figures for severely underweight and underweight children stabilize at 11 and 46 percent, respectively.

Birth order of the child can also influence the nutritional status of the child. The second round of the RCH survey reveals that young children in families with four to five siblings are most likely to be underweight. Whereas 12 and 40 percent of children of first birth order are severely underweight and underweight respectively, the corresponding figures among children of birth order four to five are 17 and 50 percent, respectively. The observed sex differential both in severe underweight and underweight children is marginal. The extent of underweight children, both severe underweight and underweight, is higher in rural areas compared to that in urban areas. While around 12 and 40 percent children in urban areas are severely underweight and underweight, the corresponding figures for rural areas are 16 and 48 percent respectively.

Children's nutritional status is also expected to be influenced by mother's educational attainment. Children whose mothers are non-literate are nearly twice as likely to be severely underweight as compared to children whose mothers have ten or more years of schooling. Similarly, in case of under weight, children of non- literate mothers are likely to be more underweight as compared to children whose mother have ten or more years of schooling The percentage of underweight children is 49 among non-literate mothers while it is 34 among mothers with ten or more years of schooling.

The results of the RCH survey show that Hindu children tend to be slightly more underweight than Muslim children. The percentage of underweight children among Jain and Hindus is respectively 20 and 45 percent. Children from scheduled tribes have the highest percentage of both severely underweight and underweight cases (19 and 47 percent, respectively), whereas children belonging to the 'other backward classes' category are relatively better off than others.

Table 4.13.1 WEIGHT FOR AGE OF CHILDREN

Percentage of children (age 0-71 months) classified as undernourished by weight for age anthropometric matrix of nutritional status according to some selected background characteristics, Karnataka, 2002-04

Background characteristic	Weight for age		Number of children
	Percentage Below – 3 SD	Percentage Below – 2 SD[1]	
Age of child (in months)			
0-5	2.3	14.4	579
6-11	14.6	38.8	704
12-23	20.5	48.4	1,559
24-47	17.3	48.5	3,250
48-71	11.3	46.3	3,107
Birth order			
1	12.2	40.0	3,222
2-3	14.1	45.3	4,270
4-5	16.5	49.7	975
6+	16.3	43.5	342
Mother's not interviewed	34.8	68.2	390
Sex of the child			
Male	15.1	46.9	4,736
Female	14.2	42.6	4,463
Residence			
Rural	16.2	47.6	5,935
Urban	11.9	39.8	3,264
Mother's education			
Non-literate	16.7	48.7	3,722
0-9@years	13.1	44.6	2,870
10 years & above	9.5	34.1	2,073
Mother's not interviewed	29.1	60.3	534
Religion			
Hindu	15.0	45.3	7,396
Muslim	14.1	44.9	1,572
Christian	6.2	29.7	160
Jain	5.5	20.3	61
Caste/tribe#			
Scheduled caste	15.0	45.9	1,875
Scheduled tribe	18.5	47.2	835
Other backward class	13.1	42.8	4,249
Other	15.7	46.7	2,164
Standard of living index			
Low	16.8	49.0	3,950
Medium	14.3	45.7	3,379
High	10.8	34.4	1,870
Total	14.6	44.8	9,199

Note: This index is expressed in standard deviation units (SD) from the median of the International Reference Population. [1]Includes children who are below – 3 SD from the International Reference Population median. @ Literate mothers with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. Total includes 9 children of other religions that were not shown separately.

As expected, household's standard of living index (SLI) is strongly correlated with the malnourishment of children as reflected through the weight for age anthropometric measure. Around one-sixth (17 percent) of the children belonging to households of lower standard of living are severely underweight and nearly two-fourth (49 percent) of the children in the same category are underweight. Whereas the corresponding figures for children belonging to high standard of living households are 11 and 34 percent, respectively.

Of the 27 districts in the state, in 2 districts the percentage of underweight children in less than 30, in 17 districts their percentage is between 30 and 50, and in 8 districts their percentage is more than 50. North and central parts of the state shows high prevalence of underweight children.

4.13.2 Anaemia among Children, Adolescent Girls, and Pregnant Women

In Karnataka, haemoglobin level was measured for 38 percent of children under 6 years of age in sampled households. On the whole, the data on haemoglobin level are available for over 5 thousand children in the state. Table 4.13.2 shows the percent of children aged 0-71 months classified by the degree of anaemia and by selected background characteristics. Around, 95 percent of the children have some level of anaemia, with 58 percent who are mildly anaemic, 34 percent who are moderately anaemic and 3 percent who are severely anaemic. Certain background characteristics of children show strong association with the level of anaemia. Some of them are: children aged 6-11 months (99 percent), children of higher birth order, more specifically, children of order six or more (99 percent), male children (96 percent), children who are severely underweight (99 percent), children from rural areas (99 percent), children of non-literate mothers (98 percent), Hindu children (96 percent), children of scheduled caste (97 percent) and children belonging to households characterized by low standard of living (98 percent). But even in the socio-economic groups with the lowest level of anaemia, over four-fifth of children are anaemic. On the other hand, in no socio-economic group the prevalence of severe anaemia is more than six percent.

Of the 27 districts in the state, in 14 districts the percentage of children with severe or moderate anaemia is in less than 35, in 7 districts their percentage is between 35 and 50, and in 6 districts their percentage is more than 50. Districts with high prevalence of anaemia among children are situated mainly in eastern part of the state.

Data on anaemia levels are available for more than 6 thousand adolescent girls aged 10-19 years who constituted 41 percent of the sample. Table 4.13.3 shows anaemia levels for adolescent girls by selected background characteristics. In Karnataka, 96 percent of adolescent girls have any anaemia. Thirty seven percent of them are mildly anaemic, 44 percent are moderately anaemic and 15 percent are having severe anaemia. It has been found from the survey results that except mild anaemia, the percentage of girls in the remaining three categories of anaemia increases marginally with the increase in age from 10-14 to 15-19 years.

The incidence of any anaemia is higher (97 percent) among adolescent girls who are currently unmarried compared to that among their married counterpart (96 percent). Except moderate and severe anaemia, the occurrence of anaemia in all other categories is found to be higher in urban areas than in rural areas. The prevalence of anaemia does not vary much with the educational attainment of girls. The level of anaemia is higher among adolescent girls (100 percent) belonging to 'other' religious group. Adolescent girls from 'other' caste are more likely to suffer from any anaemia. It is also interesting to note that adolescent girls from households with medium standard of living are slightly more likely to be anaemic.

Of the 27 districts in the state, in 8 districts the percentage of adolescent girls with severe or moderate anaemia is in less than 50, in 13 districts their percentage is between 50 and 75, and in 6 districts their percentage is more than 75. Districts with high prevalence of anaemia among adolescent girls are situated mainly in north and southern parts of the state.

Haemoglobin levels were measured for around 6,00 pregnant women aged 15-44 years who constituted 54 percent of the sample. Table 4.13.4 shows the anaemia status among pregnant women according some selected background characteristics. Around 92 percent of the pregnant women in Karnataka are suffering from some anaemia. Among pregnant women, 62 percent have mild anaemia, 30 percent who have moderate anaemia and less than one percent has severe anaemia. Thus, although levels of any anaemia among pregnant women and adolescent girls are about the same, the prevalence of severe anaemia is substantially higher in adolescent girls (15 percent) than in pregnant women (1 percent). This may be because more stringent cut-off level for severe anaemia has been used in the case of adolescent girls (8 g/dl) than in the case of pregnant women (5 g/dl). Table 4.13.4 clearly shows that percentage of pregnant women with any anaemia rises marginally with the increase in the age of the pregnant women from 89 percent for the age group 15-19 to 95 percent in the age group 25-29. Women from urban areas are more likely to experience any anaemia than their rural counterparts. The educational attainment of the pregnant women in the level of anaemia is not found to be strong. The Muslim women tend to be slightly more anaemic (96 percent) than Muslim (91 percent). Pregnant women among 'scheduled tribe' are more prone to be anaemic (98 percent) among all the caste/tribe categories. It is also interesting to note that pregnant women from households with higher standard of living are slightly more likely to be anaemic than their counterparts. Around 97 percent pregnant women belonging to poor families are anaemic compared to 95 percent among women belonging to households with higher standard of living.

Table 4.13.2 ANAEMIA AMONG CHILDREN

Percentage of children (age 0-71 months) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Karnataka, 2002-04

Background characteristic	Parentage of children with any anaemia	Percentage of children with			Number of children
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age of child (in months)					
0-5	99.2	52.8	41.7	4.7	114
6-11	99.4	55.3	37.8	6.3	280
12-23	98.6	40.7	54.5	3.4	836
24-47	94.3	56.1	35.4	2.7	2,008
48-71	94.4	68.3	23.4	2.7	2,051
Birth order					
1	94.0	58.7	32.9	2.4	1,820
2-3	95.5	59.2	33.0	3.3	2,624
4-5	97.4	53.8	39.4	4.3	607
6+	99.1	54.9	41.6	2.6	198
Mother's not interviewed	(100.0)	(68.9)	(31.1)	(0.0)	38
Sex of the child					
Male	95.9	57.8	35.3	2.9	2,725
Female	94.8	58.8	32.7	3.2	2,563
Weight for age of children					
Normal	94.5	60.5	31.6	2.4	2,904
Below – 2 SD[1]	96.4	55.6	36.9	3.9	2,384
Below – 3 SD	99.1	51.2	42.7	5.2	736
Residence					
Rural	97.3	57.6	36.5	3.1	3,315
Urban	92.2	59.4	29.9	2.9	1,973
Mother's education					
Non-literate	97.6	55.6	38.2	3.8	2,231
0-9@years	94.0	58.9	32.6	2.5	1,713
10 years & above	92.8	62.1	28.0	2.7	1,199
Mother's not interviewed	98.5	60.4	37.5	0.6	145
Religion					
Hindu	95.7	58.1	34.4	3.1	4,319
Muslim	93.5	56.2	34.6	2.7	857
Christian	98.5	84.5	13.9	0.0	81
Other	(96.2)	(73.1)	(19.2)	(3.8)	31
Caste/tribe#	97.0	52.8	42.2	1.9	993
Scheduled caste	95.4	54.5	35.4	5.5	531
Scheduled tribe	93.2	58.0	31.5	3.7	2,497
Other backward class	98.3	64.7	32.0	1.6	1,236
Other					
Standard of living index					
	97.5	55.3	38.4	3.8	2,244
Low	94.7	58.4	34.0	2.3	1,911
Medium	92.4	64.0	25.4	2.9	1,132
High					
Total	95.4	58.3	34.0	3.1	5,288

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. [1] Includes children who are below – 3 SD from the International Reference median. @ Literate mothers with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. ( ) Based on less than 50 unweighted cases. Total includes 1 case with missing information on birth order that was not shown separately.

Table 4.13.3 ANAEMIA AMONG ADOLESCENT GIRLS

Percentage of adolescent girls[1] (age 10-19 years) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Karnataka, 2002-04

Background characteristic	Parentage of adolescent with any anaemia	Percentage of adolescent with			Number of adolescent girls
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
10-14	96.1	39.9	41.8	14.4	3,036
15-19	96.7	35.1	46.4	15.3	3,114
Marital status					
Currently married	97.1	28.2	48.7	20.3	583
Currently not married	96.3	38.4	43.7	14.3	5,567
Residence					
Rural	96.2	35.7	45.2	15.3	3,848
Urban	96.8	40.4	42.3	14.1	2,302
Education					
Non-literate	97.1	31.0	45.9	20.2	765
0-9@years	96.2	38.3	44.0	14.0	4,117
10 years & above	96.5	38.7	43.5	14.3	1,268
Religion					
Hindu	96.2	37.7	43.6	14.8	5,098
Muslim	97.2	35.9	46.6	14.7	917
Christian	99.3	36.5	42.7	20.2	78
Other	100.0	42.3	49.7	8.0	57
Caste/tribe#					
Scheduled caste	97.1	34.5	44.4	18.2	1,192
Scheduled tribe	95.1	39.1	42.5	13.4	497
Other backward class	95.7	40.8	40.5	14.4	2,958
Other	97.7	33.0	51.3	13.4	1,459
Standard of living index					
Low	96.3	33.6	46.3	16.4	2,523
Medium	96.6	36.2	45.7	14.7	2,283
High	96.2	46.7	37.5	12.0	1,344
Total	96.4	37.4	44.1	14.8	6,150

Note: Haemoglobin level between 10.0 - 11.9 g/dl is mild anaemia, 8.0 - 9.9 g/dl is moderate anaemia and below 8.0 g/dl is severe anaemia. [1] Includes currently married women age 15-19 years who were not pregnant at the time of survey. @ Literate adolescent with no years of schooling are also included# Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases.

Table 4.13.4 ANAEMIA AMONG PREGNANT WOMEN

Percentage of pregnant women (age 15-44 years) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Karnataka, 2002-04

Background characteristic	Parentage of pregnant women with any anaemia	Percentage of pregnant women with			Number of pregnant women
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
15-19	89.3	59.4	29.0	1.0	193
20-24	92.1	62.9	28.5	0.7	265
25-29	94.5	62.5	30.2	1.8	99
30-34	(93.3)	(62.2)	(31.1)	(0.0)	37
Residence					
Rural	91.2	62.7	27.7	0.8	448
Urban	93.9	58.1	34.7	1.1	157
Education					
Non-literate	94.2	55.6	37.2	1.4	212
0-9@years	87.7	57.0	29.8	1.0	245
10 years & above	95.5	77.5	18.1	0.0	148
Religion					
Hindu	90.9	60.1	29.9	0.9	492
Muslim	96.4	66.5	29.2	0.7	105
Caste/tribe#					
Scheduled caste	85.9	50.8	33.5	1.6	133
Scheduled tribe	97.6	62.5	35.1	0.0	51
Other backward class	91.1	63.5	26.7	0.9	266
Other	96.4	66.6	29.3	0.5	149
Standard of living index					
Low	90.5	60.4	28.9	1.3	261
Medium	92.3	59.8	32.0	0.4	249
High	94.8	69.0	24.7	1.1	96
Total	91.9	61.5	29.5	0.9	605

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. @ Literate women with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. ( ) Based on less than 50 unweighted cases. Total includes 9 & 1 case in age group 35-39 & 40-44, 8 cases of other religions and 6 cases in don't know castes that were not shown separately.

4.14 KERALA

4.14.1 Weight for Age of Children:

In Kerala, weight was measured for 65 percent of children under 6 years of age in sampled households. On the whole, data on weight are available for over 4 thousand children in the state. Table 4.14.1 shows the percentage of children under 6 years of age classified as undernourished, as measured by weight for age index by some selected background characteristics. In the following discussion, children whose weight in SD unit (Z score) is less than –3 would be referred to as 'severely underweight' and those with weights in SD unit less than -2 would be referred to simply as 'underweight'. More than nine percent of the children in Kerala are severely underweight and more than one third (36 percent) of the children are underweight. The proportion of undernourished children increases rapidly with the child's age up to 24-47 months and shows a decrease thereafter. More than one-tenth (13 percent) of the children in the age group 24-47 months are severely underweight whereas more than two-fifth (43 percent) of the children in the same age group are underweight. By age 48-71 months the corresponding figures for severely underweight and underweight children stabilize at 10 and 44 percent, respectively.

Birth order of the child can also influence the nutritional status of the child. The second round of the RCH survey reveals that young children in families with four to five or more siblings are most likely to be underweight. Whereas 9 and 35 percent of children of first birth order are severely underweight and underweight respectively, the corresponding figures among children of birth order four to five are 11 and 40 percent, respectively. The observed sex differential both in severe underweight and underweight children is marginal. The extent of underweight children, both severe underweight and underweight, is slightly higher in rural areas compared to that in urban areas. While around 9 percent children in rural and urban areas are severely underweight and underweight, the corresponding figures for rural areas are 36 and 35 percent respectively.

Children's nutritional status is also expected to be influenced by mother's educational attainment. Children whose mothers are non-literate are about more than twice as likely to be severely underweight as compared to children whose mothers have ten or more years of schooling. Similarly, in case of under weight, children of non-literate women are likely to be more underweight as compared to children whose mother have ten or more years of schooling. Their percentage is 43 among children of non-literate mothers while it is 29 percent among children of mothers with ten or more years of schooling.

The results of the RCH survey show that Hindu children tend to be more underweight than Christian children. The percentage of underweight children among Christians and Hindus is respectively 30 and 38 percent. Children from scheduled castes have the highest percentage of both severely underweight and underweight cases (16 and 44 percent, respectively), whereas children belonging to the 'other castes' category are relatively better off than others.

Table 4.14.1 WEIGHT FOR AGE OF CHILDREN

Percentage of children (age 0-71 months) classified as undernourished by weight for age anthropometric matrix of nutritional status according to some selected background characteristics, Kerala 2002-04

Background characteristic	Weight for age		
	Percentage Below – 3 SD	Percentage Below – 2 SD[1]	Number of children
Age of child (in months)			
0-5	0.8	2.7	374
6-11	4.8	22.6	487
12-23	8.1	34.0	755
24-47	13.2	43.4	1,468
48-71	10.0	43.5	1,141
Birth order			
1	8.8	34.6	1,815
2-3	9.0	34.9	1,933
4-5	10.8	41.0	175
6+	(9.1)	(39.4)	34
Mother's not interviewed	14.6	45.5	268
Sex of the child			
Male	11.1	38.2	2,097
Female	7.6	33.4	2,129
Residence			
Rural	9.4	36.3	2,880
Urban	9.2	34.6	1,346
Mother's education			
Non-literate	14.6	42.8	95
0-9@years	10.8	39.1	2,002
10 years & above	6.9	29.0	1,671
Mother's not interviewed	10.9	44.6	458
Religion			
Hindu	10.6	37.6	2,231
Muslim	9.2	35.6	1,281
Christian	5.8	30.0	708
Caste/tribe#			
Scheduled caste	15.8	43.9	528
Scheduled tribe	14.1	44.4	68
Other backward class	8.6	35.4	2,616
Other	7.6	31.7	1,006
Standard of living index			
Low	13.1	43.0	604
Medium	9.7	38.3	1,973
High	7.6	30.0	1,648
Total	9.3	35.8	4,226

Note: This index is expressed in standard deviation units (SD) from the median of the International Reference Population [1]Includes children who are below – 3 SD from the International Reference Population median. @ Literate mothers with no years of schooling are also included# Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases ( ) Based on less than 50 unweighted cases. Total includes 5 children of other religions that were not shown separately.

As expected, household's standard of living index (SLI) is strongly correlated with the malnourishment of children as reflected through the weight for age anthropometric measure. More than one-tenth (13 percent) of the children belonging to households of lower standard of living are severely underweight and more than two-fifth (43 percent) of the children in the same category are underweight. Whereas the corresponding figures for children belonging to high standard of living households are 8 and 30 percent, respectively.

Of the 14 districts in the state, in 3 districts the percentage of underweight children in less than 30, in 10 districts their percentage is between 30 and 50, and in one district their percentage is more than 50. Central-east part of the state shows high prevalence of underweight children.

4.14.2 Anaemia among Children, Adolescent Girls, and Pregnant Women

In Kerala, haemoglobin level was measured for 26 percent of children under 6 years of age in sampled households. On the whole, the data on haemoglobin level are available for over 1 thousand children in the state. Table 4.14.2 shows the percent of children aged 0-71 months classified by the degree of anaemia and by selected background characteristics. Around, 90 percent of the children have some level of anaemia, with 79 percent who are mildly anaemic and 10 percent who are moderately anaemic. Certain background characteristics of children show strong association with the level of anaemia. Some of them are: children aged 12-23 months (96 percent), children of higher birth order, more specifically, children of order two to three (90 percent), female children (91 percent), children who are severely underweight (91 percent), children from urban areas (94 percent), children of mothers with 0-9 years of education (91 percent), Hindu children (91 percent), children of 'scheduled caste' (94 percent) and children belonging to households characterized by higher standard of living (91 percent). But even in the socio-economic groups with the lowest level of anaemia, more than eighty percent of children are anaemic. On the other hand, in no socio-economic group the prevalence of severe anaemia is more than two percent.

Of the 14 districts in the state, the percentage of children with severe or moderate anaemia is in less than 35.

Data on anaemia levels are available for more than one thousand adolescent girls aged 10-19 years who constituted 25 percent of the sample. Table 4.14.3 shows anaemia levels for adolescent girls by selected background characteristics. In Kerala, 90 percent of adolescent girls have any anaemia. 58 percent of them are mildly anaemic, 29 percent are moderately anaemic and 2 percent is having severe anaemia. It has been found from the survey results that except moderate and severe anaemia, the percentage of girls in the remaining two categories of anaemia diminishes marginally with the increase in age from 10-14 to 15-19 years. The incidence of any anaemia is higher (91 percent) among adolescent girls who are currently unmarried compared to that among their married counterpart (86 percent). Except moderate and severe anaemia, the occurrence of anaemia in the other two categories is found to be higher in urban areas than in rural areas.

The prevalence of anaemia does not vary much with the educational attainment of girls. The level of anaemia is higher among Hindu and Muslim adolescent girls (91 percent). Adolescent girls from 'scheduled tribe' are more likely to suffer from any anaemia. It is also interesting to note that adolescent girls from households with medium standard of living are slightly more likely to be anaemic.

Of the 14 districts in the state, in 10 districts the percentage of adolescent girls with severe or moderate anaemia is in less than 50 and 4 districts is between 50 and 75. Districts with high prevalence of anaemia among adolescent girls are situated mainly in north and southern parts of the state.

Haemoglobin levels were measured for nearly 300 pregnant women aged 15-44 years who constituted 48 percent of the sample. Table 4.14.4 shows the anaemia status among pregnant women according some selected background characteristics. Around 90 percent of the pregnant women in Kerala are suffering from some anaemia. Among pregnant women, 85 percent have mild anaemia and 5 percent who have moderate anaemia. Thus, although levels of any anaemia among pregnant women and adolescent girls are about the same, the prevalence of moderate anaemia is substantially higher in adolescent girls (30 percent) than in pregnant women (5 percent). Table 4.14.4 clearly shows that percentage of pregnant women with any anaemia rises steadily with the increase in the age of the pregnant women from 78 percent for the age group 15-19 to 93 percent in the age group 25-29. Women from urban areas are experience slightly higher any anaemia than rural areas. The prevalence of anaemia decreases marginally with the level of educational attainment of the pregnant women. The Christian women tend to be slightly more anaemic (94 percent) than Hindu women. Pregnant women among 'scheduled caste' are more prone to be anaemic (91 percent) among all the caste/tribe categories. As expected, standard of living is not negatively associated with the anaemia status of the pregnant women. Around 75 percent pregnant women belonging to low standard of living are anaemic compared to 92 percent among women belonging to households with higher standard of living.

Table 4.14.2 ANAEMIA AMONG CHILDREN

Percentage of children (age 0-71 months) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Kerala, 2002-04

Background characteristic	Parentage of children with any anaemia	Percentage of children with		Number of children
		Mild anaemia	Moderate anaemia	
Age of child (in months)				
0-5	(88.5)	(80.8)	(7.7)	25
6-11	95.8	80.1	15.7	92
12-23	96.2	72.2	24.0	291
24-47	91.5	82.3	9.2	672
48-71	83.2	79.4	3.9	578
Birth order				
1	89.1	79.4	9.7	689
2-3	90.4	79.5	10.9	806
4-5	80.2	76.9	3.3	68
Mother's not interviewed	94.6	79.0	15.6	81
Sex of the child				
Male	87.9	77.1	10.7	827
Female	91.3	81.6	9.7	831
Weight for age of children				
Normal	89.2	80.0	9.2	1,031
Below – 2 SD[1]	90.3	78.3	12.0	627
Below – 3 SD	93.0	77.7	15.2	159
Residence				
Rural	87.6	78.2	9.4	1,118
Urban	93.8	81.8	11.9	540
Mother's education				
Non-literate	90.7	76.7	14.0	53
0-9@years	89.5	78.7	10.8	808
10 years & above	88.4	80.6	7.8	659
Mother's not interviewed	95.5	78.4	17.2	138
Religion				
Hindu	91.3	80.9	10.4	930
Muslim	85.9	75.2	10.8	444
Christian	89.8	80.9	8.9	281
Caste/tribe#				
Scheduled caste	93.5	78.1	15.3	244
Scheduled tribe	(90.0)	(76.7)	(13.3)	28
Other backward class	88.3	78.1	10.2	996
Other	90.7	84.1	6.6	386
Standard of living index				
Low	86.4	72.4	14.0	271
Medium	89.9	78.9	11.0	767
High	90.7	83.0	7.7	619
Total	89.6	79.4	10.2	1,658

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. [1] Includes children who are below – 3 SD from the International Reference median. @ Literate mothers with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. ( ) based on less than 50 unweighted cases. Total includes 13 cases with missing information on birth order were not shown separately. Total includes 13 cases in birth order 6+ and 2 cases of religions that were not shown separately.

Table 4.14.3 ANAEMIA AMONG ADOLESCENT GIRLS

Percentage of adolescent girls[1] (age 10-19 years) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Kerala, 2002-04

Background characteristic	Parentage of adolescent with any anaemia	Percentage of adolescent with			Number of adolescent girls
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
10-14	90.6	63.4	26.1	1.1	535
15-19	90.4	55.5	31.9	2.9	910
Marital status					
Currently married	85.5	67.7	17.8	0.0	78
Currently not married	90.7	57.9	30.5	2.4	1,366
Residence					
Rural	89.2	62.6	25.3	1.4	923
Urban	92.7	51.1	37.8	3.7	522
Education					
0-9@years	90.8	59.7	29.0	2.1	888
10 years & above	89.8	56.0	31.2	2.5	544
Religion					
Hindu	90.7	55.5	32.9	2.3	775
Muslim	90.6	65.6	22.1	2.9	443
Christian	88.9	55.2	33.2	0.5	221
Caste/tribe#					
Scheduled caste	93.2	54.1	36.6	2.5	192
Other backward class	89.9	59.4	27.8	2.7	912
Other	90.7	58.7	31.1	0.8	330
Standard of living index					
Low	89.4	55.2	30.6	3.6	205
Medium	90.8	59.1	29.9	1.8	717
High	90.3	58.7	29.3	2.3	523
Total	90.4	58.4	29.8	2.2	1,445

Note: Haemoglobin level between 10.0 - 11.9 g/dl is mild anaemia, 8.0 - 9.9 g/dl is moderate anaemia and below 8.0 g/dl is severe anaemia. [1] Includes currently married women age 15-19 years who were not pregnant at the time of survey. @ Literate adolescent with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. In religion 6 cases of other category are not shown separately.

Table 4.14.4 ANAEMIA AMONG PREGNANT WOMEN

Percentage of pregnant women (age 15-44 years) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Kerala, 2002-04

Background characteristic	Parentage of pregnant women with any anaemia	Percentage of pregnant women with		Number of pregnant women
		Mild anaemia	Moderate anaemia	
Age (in years)				
15-19	(78.1)	(75.0)	(3.1)	34
20-24	88.5	83.4	5.1	119
25-29	93.3	86.0	7.3	110
30-34	(90.2)	(85.4)	(4.9)	39
Residence				
Rural	89.0	84.7	4.3	210
Urban	92.3	84.5	7.8	100
Education				
0-9@years	90.7	85.4	5.3	145
10 years & above	89.2	83.6	5.6	158
Religion				
Hindu	91.8	87.9	3.9	178
Muslim	83.2	74.0	9.2	75
Christian	94.0	88.6	5.3	57
Caste/tribe#				
Scheduled caste	(91.1)	(86.7)	(4.4)	46
Other backward class	89.2	82.4	6.8	181
Other	90.9	88.9	2.0	77
Standard of living index				
Low	(75.0)	(63.6)	(11.4)	37
Medium	91.2	88.5	2.7	146
High	91.8	85.1	6.6	126
Total	90.1	84.6	5.4	309

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. @ Literate women with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. ( ) Based on less than 50 unweighted cases. Total includes 3 & 4 cases in age group category 35-39 & 40-44, 6 non literate cases and 5 & 2 cases in scheduled tribe & don't know castes that were not shown separately.

4.15 MADHYA PRADESH

4.15.1 Weight for Age of Children:

In Madhya Pradesh , weight was measured for 73 percent of children under 6 years of age in sampled households. On the whole, data on weight are available for around 27 thousand children in the state. Table 4.15.1 shows the percentage of children under 6 years of age classified as undernourished, as measured by weight for age index by some selected background characteristics. In the following discussion, children whose weight in SD unit (Z score) is less than –3 would be referred to as 'severely underweight' and those with weight in SD unit less than -2 would be referred to simply as 'underweight'. More than one-fifth (24 percent) of the children in Madhya Pradesh are severely underweight and more than half (55 percent) of the children are underweight. The proportion of undernourished children increases rapidly with the child's age upto 12-23 months and shows a decrease thereafter. Around one-third (33 percent) of the children in the age group 12-23 months are severely underweight whereas more than three-fifth (64 percent) of the children in the same age group are underweight. By age 48-71 months the corresponding figures for severely underweight and underweight children stabilize at 20 and 56 percent, respectively.

Birth order of the child can also influence the nutritional status of the child. The second round of the RCH survey reveals that young children in families with six or more siblings are most likely to be underweight. Whereas 21 and 52 percent of children of first birth order are severely underweight and underweight respectively, the corresponding figures among children of birth order six or more are 31 and 61 percent, respectively. The observed sex differential both in severe underweight and underweight children is marginal. The extent of underweight children, both severe underweight and underweight, is higher in rural areas compared to that in urban areas. While around 17 and 48 percent children in urban areas are severely underweight and underweight, the corresponding figures for rural areas are 27 and 58 percent respectively.

Children's nutritional status is also expected to be influenced by mother's educational attainment. Children whose mothers are non-literate are about more than twice as likely to be severely underweight as compared to children whose mothers have ten or more years of schooling. Similarly, in case of underweight children, non- literate mothers are more underweight than literate mothers. Their percentage is 60 among children of non-literate mothers while it is 39 percent among children of mothers with ten or more years of schooling.

The results of the RCH survey show that Hindu religion tend to be more underweight than Jain children. The percentage of underweight children among Jains and Hindus is respectively 40 and 56 percent. Children from scheduled tribes have the highest percentage of both severely underweight and underweight cases (29 and 61 percent, respectively), whereas children belonging to the 'other castes' category are relatively better off than others.

Table 4.15.1 WEIGHT FOR AGE OF CHILDREN

Percentage of children (age 0-71 months) classified as undernourished by weight for age anthropometric matrix of nutritional status according to scme selected background characteristics, Madhya Pradesh, 2002-04

Background characteristic	Weight for age		Number of children
	Percentage Below - 3 SD	Percentage Below - 2 SD[1]	
Age of child (in months)			
0-5	5.2	17.6	2,025
6-11	25.2	52.5	2,242
12-23	32.8	64.4	4,163
24-47	28.1	59.3	9,345
48-71	20.0	56.3	9,325
Birth order			
1	21.1	52.2	7,157
2-3	23.2	55.2	10,864
4-5	27.5	59.8	4,843
6+	31.0	60.7	2,444
Mother's not interviewed	22.7	49.8	1,792
Sex of the child			
Male	24.4	56.4	13,973
Female	23.8	54.2	13,127
Residence			
Rural	26.5	58.2	19,884
Urban	17.3	47.5	7,216
Mother's education			
Non-literate	28.6	60.3	15,342
0-9@years	19.5	53.1	6,704
10 years & above	12.6	38.6	2,744
Mother's not interviewed	20.8	48.9	2,311
Religion			
Hindu	24.5	55.9	24,881
Muslim	19.3	49.3	1,810
Christian	10.1	44.6	56
Jain	14.5	40.3	214
Other	25.1	52.3	140
Caste/tribe#			
Scheduled caste	26.1	58.3	4,867
Scheduled tribe	29.4	60.6	5,570
Other backward class	23.1	54.8	11,081
Other	17.8	47.2	4,939
Standard of living index			
Low	28.3	59.7	15,913
Medium	21.3	53.5	6,685
High	13.1	42.6	4,493
Total	24.1	55.4	27,100

Note: This index is expressed in standard deviation units (SD) from the median of the International Reference Population. [1]Includes children who are below – 3 SD from the International Reference Population median. @ Literate mothers with no years of schooling are also included# Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. Total includes 9 cases in 'Don't know' in caste and 9 cases with missing information on standard of living index that were not shown separately.

As expected, household's standard of living index (SLI) is strongly correlated with the malnourishment of children as reflected through the weight for age anthropometric measure. More than one-fourth (28 percent) of the children belonging to households of lower standard of living are severely underweight and around three-fifth (60 percent) of the children in the same category are underweight. Whereas the corresponding figures for children belonging to high standard of living households are 13 and 43 percent, respectively.

Of the 45 districts in the state, in one district the percentage of underweight children in less than 30, in 13 districts their percentage is between 30 and 50, and in 31 districts their percentage is more than 50. North and western parts of the state shows high prevalence of underweight children

4.15.2 Anaemia among Children, Adolescent Girls, and Pregnant Women

In Madhya Pradesh, haemoglobin level was measured for 65 percent of children under 6 years of age in sampled households. On the whole, the data on haemoglobin level are available for over 17 thousand children in the state. Table 4.15.2 shows the percent of children aged 0-71 months classified by the degree of anaemia and by selected background characteristics. Around, 96 percent of the children have some level of anaemia, with 42 percent who are mildly anaemic, 50 percent who are moderately anaemic and 4 percent who are severely anaemic. Certain background characteristics of children show strong association with the level of anaemia. Some of them are: children aged 6-11 months (97 percent), children of higher birth order, more specifically, children of order two to three or four to five (96 percent), male children (96 percent), children who are severely underweight (97 percent), children from rural areas (96 percent), children of non-literate mothers (96 percent), Hindu children (96 percent), children of scheduled tribes (98 percent) and children belonging to households characterized by low standard of living (96 percent). But even in the socio-economic groups with the lowest level of anaemia, over four-fifth of children are anaemic. On the other hand, in no socio-economic group the prevalence of severe anaemia is more than five percent.

Of the 45 districts in the state, in 7 districts the percentage of children with severe or moderate anaemia is in less than 35, in 8 districts their percentage is between 35 and 50, and in 26 districts their percentage is more than 50. Districts with high prevalence of anaemia among children are situated mainly in north, west and eastern parts of the state.

Data on anaemia levels are available for about 12 thousand adolescent girls aged 10-19 years who constituted 57 percent of the sample. Table 4.15.3 shows anaemia levels for adolescent girls by selected background characteristics. In Madhya Pradesh, 99 percent of adolescent girls have any anaemia. Twenty percent of them are mildly anaemic, 45 percent are moderately anaemic and 33 percent are having severe anaemia. It has been found from the survey results that except severe anaemia, the percentage of girls in the remaining three categories of anaemia diminishes marginally with the increase in age from 10-14 to 15-19 years.

The incidence of any anaemia is higher (100 percent) among adolescent girls who are currently married compared to that among their unmarried counterpart (98 percent). Except mild anaemia, the occurrence of anaemia in the other categories is found to be higher in rural areas than in urban areas. The prevalence of anaemia does not vary much with the educational attainment of girls. The level of anaemia is higher among adolescent girls (100 percent) belonging to 'other' religious group. Adolescent girls from scheduled tribes are more likely to suffer from any anaemia. The adolescent girls from households with lower standard of living are slightly more likely to be anaemic.

Of the 40 districts in the state, in one district the percentage of adolescent girls with severe or moderate anaemia is in less than 50, in 12 districts their percentage is between 50 and 75, and in 27 districts their percentage is more than 75. Districts with high prevalence of anaemia among adolescent girls are situated mainly in west, east and northern parts of the state.

Haemoglobin levels were measured for 1,000 pregnant women aged 15-44 years who constituted 70 percent of the sample. Table 4.15.4 shows the anaemia status among pregnant women according some selected background characteristics. Around 97 percent of the pregnant women in Madhya Pradesh are suffering from some anaemia. Among pregnant women, 42 percent have mild anaemia, 51 percent who have moderate anaemia and more than three percent have severe anaemia. Thus, although levels of any anaemia among pregnant women and adolescent girls are almost same, the prevalence of severe anaemia is substantially higher in adolescent girls (33 percent) than in pregnant women (3 percent). This may be because more stringent cut-off level for severe anaemia has been used in the case of adolescent girls (8 g/dl) than in the case of pregnant women (5 g/dl). Table 4.15.4 clearly shows that percentage of pregnant women with any anaemia falls marginally with the increase in the age of the pregnant women from 98 percent for the age group 15-19 to 95 percent in the age group 35-39. Women from rural areas are more likely to experience any anaemia than their urban counterparts. The educational and religious differences in levels of anaemia are not found to be strong. Pregnant women among scheduled tribes are more prone to be anaemic (98 percent) among all the caste/tribe categories. As expected, standard of living is negatively associated with the anaemia status of the pregnant women. But the effect is very marginal. Around 98 percent pregnant women belonging to poor families are anaemic compared to 95 percent among women belonging to households with higher standard of living.

Table 4.15.2 ANAEMIA AMONG CHILDREN

Percentage of children (age 0-71 months) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Madhya Pradesh, 2002-04

Background characteristic	Parentage of children with any anaemia	Percentage of children with			Number of children
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age of child (in months)					
0-5	92.1	45.5	43.0	3.6	1,542
6-11	97.1	34.8	58.1	4.2	1,324
12-23	96.9	34.2	57.9	4.8	2,631
24-47	96.8	39.0	53.8	4.1	6,027
48-71	95.1	48.5	43.6	3.0	6,224
Birth order					
1	95.1	42.3	49.1	3.6	4,924
2-3	96.2	41.1	51.1	4.0	7,024
4-5	96.2	41.3	51.3	3.6	3,086
6+	95.8	40.3	50.9	4.5	1,436
Mother's not interviewed	95.5	47.0	45.8	2.8	1,277
Sex of the child					
Male	96.0	42.1	50.3	3.7	9,167
Female	95.6	41.6	50.1	3.9	8,575
Weight for age of children					
Normal	94.4	44.4	46.8	3.2	8,695
Below – 2 SD[1]	97.2	39.4	53.5	4.3	9,052
Below – 3 SD	97.5	36.0	56.1	5.4	3,944
Residence					
Rural	96.0	41.8	50.6	3.6	13,390
Urban	95.1	42.0	48.8	4.3	4,357
Mother's education					
Non-literate	96.3	40.4	52.1	3.7	9,813
0-9@years	95.8	42.2	49.4	4.2	4,600
10 years & above	94.3	42.7	47.6	4.0	1,715
Mother's not interviewed	94.8	48.6	43.4	2.7	1,619
Religion					
Hindu	95.9	41.9	50.2	3.8	16,558
Muslim	94.2	41.5	49.2	3.4	940
Jain	95.0	40.9	50.2	3.9	143
Other	92.8	38.1	53.3	1.4	106
Caste/tribe#					
Scheduled caste	96.4	42.1	50.5	3.8	3,297
Scheduled tribe	97.9	40.3	54.3	3.3	3,477
Other backward class	95.1	42.2	49.2	3.8	7,671
Other	94.6	42.6	47.8	4.2	3,223
Standard of living index					
Low	96.0	41.3	51.2	3.6	10,817
Medium	95.5	42.1	49.4	4.1	4,287
High	95.6	44.0	47.6	4.1	2,636
Total	95.8	41.8	50.2	3.8	17,747

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. [1] Includes children who are below – 3 SD from the International Reference median. @ Literate mothers with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. Total includes 5 cases with missing information on sex of child, 8 cases each in caste and standard of living index that were not shown separately.

Table 4.15.3 ANAEMIA AMONG ADOLESCENT GIRLS

Percentage of adolescent girls[1] (age 10-19 years) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Madhya Pradesh, 2002-04

Background characteristic	Parentage of adolescent with any anaemia	Percentage of adolescent with			Number of adolescent girls
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
10-14	98.7	20.4	46.0	32.3	6,983
15-19	98.1	19.8	43.8	34.5	4,995
Marital status					
Currently married	99.6	14.7	43.7	41.2	1,013
Currently not married	98.4	20.7	45.2	32.5	10,966
Residence					
Rural	98.8	20.0	45.2	33.7	7,955
Urban	97.7	20.6	44.9	32.2	4,023
Education					
Non-literate	98.7	16.7	44.5	37.4	2,109
0-9@years	98.5	20.6	45.5	32.4	8,706
10 years & above	97.8	22.9	43.3	31.7	1,163
Religion					
Hindu	98.5	20.3	44.8	33.4	10,866
Muslim	97.4	19.7	46.1	31.6	891
Jain	98.3	14.7	57.9	25.8	129
Other	99.5	17.7	46.7	35.1	87
Caste/tribe#					
Scheduled caste	98.2	21.8	45.3	31.1	1,962
Scheduled tribe	99.6	15.2	46.0	38.4	1,831
Other backward class	98.5	20.9	45.0	32.6	5,257
Other	98.0	21.0	44.4	32.5	2,872
Standard of living index					
Low	98.7	19.5	44.7	34.6	6,125
Medium	98.3	21.5	45.4	31.4	3,137
High	98.0	20.2	45.7	32.1	2,716
Total	98.5	20.2	45.1	33.2	11,978

Note: Haemoglobin level between 10.0 - 11.9 g/dl is mild anaemia, 8.0 - 9.9 g/dl is moderate anaemia and below 8.0 g/dl is severe anaemia. [1] Includes currently married women age 15-19 years who were not pregnant at the time of survey. @ Literate adolescent with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. In religion 6 cases of missing that are not shown separately.

Table 4.15.4 ANAEMIA AMONG PREGNANT WOMEN

Percentage of pregnant women (age 15-44 years) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Madhya Pradesh, 2002-04

Background characteristic	Parentage of pregnant women with any anaemia	Percentage of pregnant women with			Number of pregnant women
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
15-19	98.4	42.8	53.2	2.4	319
20-24	96.7	42.8	50.4	3.4	786
25-29	96.8	43.4	51.5	2.0	393
30-34	95.4	32.7	57.0	5.7	129
35-39	95.1	50.1	37.2	7.8	53
Residence					
Rural	97.3	42.2	51.6	3.6	1,286
Urban	95.4	42.4	50.1	2.9	410
Education					
Non-literate	97.9	40.6	53.4	3.9	937
0-9@years	95.0	44.6	48.3	2.1	555
10 years & above	97.3	43.3	50.2	3.8	200
Religion					
Hindu	97.0	42.0	51.5	3.5	1,576
Muslim	95.7	47.8	46.7	1.2	108
Caste/tribe#					
Scheduled caste	97.7	42.5	50.7	4.5	346
Scheduled tribe	98.1	35.0	58.9	4.1	349
Other backward class	96.3	46.0	48.0	2.3	689
Other	95.8	41.1	50.8	3.9	305
Standard of living index					
Low	98.0	39.9	54.2	3.9	990
Medium	95.5	44.8	47.9	2.7	435
High	94.8	46.5	45.9	2.4	272
Total	96.9	42.2	51.2	3.4	1,696

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. @ Literate women with no years of schooling are also included# Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. Total includes 16 cases in age group category 40-44, 12 cases in other religions and 8 cases in don't know castes that were not shown separately.

4.16 MAHARASHTRA

4.16.1 Weight for Age of Children:

In Maharashtra, weight was measured for 70 percent of children under 6 years of age in sampled households. On the whole, data on weight are available for over 16 thousand children in the state. Table 4.16.1 shows the percentage of children under 6 years of age classified as undernourished, as measured as by weight for age index by some selected background characteristics. In the following discussion, children whose weight in SD unit (Z score) is less than –3 would be referred to as 'severely underweight' and those with weight in SD unit less than -2 would be referred to simply as 'underweight'. Around 15 percent of the children in Maharashtra are severely underweight and more two-fifth (48 percent) of the children are underweight. The proportion of undernourished children increases rapidly with the child's age up to 12-23 months and shows a decrease thereafter. More than one-sixth (18 percent) of the children in the age group 12-23 months are severely underweight whereas around half (50 percent) of the children in the same age group are underweight. By age 48-71 months the corresponding figures for severely underweight and underweight children stabilize at 15 and 53 percent, respectively.

Birth order of the child can also influence the nutritional status of the child. The second round of the RCH survey reveals that young children in families with six or more siblings are most likely to be underweight. Whereas 13 and 45 percent of children of first birth order are severely underweight and underweight respectively, the corresponding figures among children of birth order six or more are 28 and 57 percent, respectively. The observed sex differential both in severe underweight and underweight children is marginal. The extent of underweight children, both severe underweight and underweight, is higher in rural areas compared to that in urban areas. While around 11 and 42 percent children in urban areas are severely underweight and underweight, the corresponding figures for rural areas are 15 and 48 percent respectively.

Children's nutritional status is also expected to be influenced by mother's educational attainment. Children whose mothers are non-literate are around twice as likely to be severely underweight as compared to children whose mothers have ten or more years of schooling. Similarly, in case of underweight, children of non-literate mothers are more than one-sixth as likely to be underweight as compared to the children whose mothers have ten or more years of schooling. Their percentage is 58 percent among children of non-literate mothers while it is 35 percent among children of mothers with ten or more years of schooling.

The results of the RCH survey show that Buddhist children tend to be slightly more underweight than Jain children. The percentage of underweight children among Jains and Buddhists is respectively 33 and 48 percent. Children from scheduled tribes have the highest percentage of both severely underweight and underweight cases (24 and 59 percent, respectively), whereas children belonging to the 'other castes' category are relatively better off than others.

Table 4.16.1 WEIGHT FOR AGE OF CHILDREN

Percentage of children (age 0-71 months) classified as undernourished by weight for age anthropometric matrix of nutritional status according to some selected background characteristics, Maharashtra, 2002-04

Background characteristic	Weight for age		Number of children
	Percentage Below – 3 SD	Percentage Below – 2 SD[1]	
Age of child (in months)			
0-5	2.1	8.1	1,182
6-11	11.7	37.1	1,283
12-23	17.9	50.2	2,799
24-47	16.8	52.0	5,695
48-71	15.1	53.3	5,180
Birth order			
1	12.7	45.4	5002
2-3	15.3	48.6	7,409
4-5	19.1	54.5	1,758
6+	27.8	57.4	494
Mother's not interviewed	11.6	39.9	1,475
Sex of the child			
Male	15.1	47.5	8,385
Female	14.8	47.9	7,754
Residence			
Rural	17.7	52.0	9,446
Urban	11.1	41.7	6,693
Mother's education			
Non-literate	22.1	57.5	4,631
0-9@years	14.5	49.0	6,613
10 years & above	7.7	35.3	3,398
Mother's not interviewed	11.9	40.1	1,496
Religion			
Hindu	15.2	48.0	12,568
Muslim	13.5	45.9	2,222
Christian	5.7	34.4	110
Buddhist	17.6	50.9	1,095
Jain	3.7	33.1	90
Other	13.0	48.3	54
Caste/tribe#			
Scheduled caste	17.0	50.8	2,512
Scheduled tribe	23.7	59.0	2,961
Other backward class	14.0	48.3	4,248
Other	10.8	40.9	6,249
Standard of living index			
Low	22.0	58.1	5,895
Medium	13.3	46.6	6,261
High	7.2	34.1	3,983
Total	15.0	47.7	16,139

Note: This index is expressed in standard deviation units (SD) from the median of the International Reference Population. [1]Includes children who are below – 3 SD from the International Reference Population median. @ Literate mothers with no years of schooling are also included# Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases.

As expected, household's standard of living index (SLI) is strongly correlated with the malnourishment of children as reflected through the weight for age anthropometric measure. More than one-fifth (22 percent) of the children belonging to households of lower standard of living are severely underweight and more than half (58 percent) of the children in the same category are underweight. Whereas the corresponding figures for children belonging to high standard of living households are 7and 34 percent, respectively.

Of the 35 districts in the state, in 14 districts their percentage is between 30 and 50, and in 21 districts their percentage is more than 50. North and eastern parts of the state shows high prevalence of underweight children.

4.16.2 Anaemia among Children, Adolescent Girls, and Pregnant Women

In Maharashtra, haemoglobin level was measured for 62 percent of children under 6 years of age in sampled households. On the whole, the data on haemoglobin level are available for over 13 thousand children in the state. Table 4.16.2 shows the percent of children aged 0-71 months classified by the degree of anaemia and by selected background characteristics. Around 98 percent of the children have some level of anaemia, with 45 percent who are mildly anaemic, 50 percent who are moderately anaemic and 3 percent who are severely anaemic. Certain background characteristics of children show strong association with the level of anaemia. Some of them are: children aged 6-11 months (99 percent), children of higher birth order, more specifically, children of order six or more (99 percent), male children (99 percent), children who are underweight and severely underweight (99 percent), children from rural areas (98 percent), children of non-literate mothers (98 percent), Buddhist children (100 percent), children of schedule castes and tribes (99 percent) and children belonging to households characterized by low standard of living (81 percent). But even in the socio-economic groups with the lowest level of anaemia, over two-thirds of children are anaemic. On the other hand, in no socio-economic group the prevalence of severe anaemia is more than two percent.

Of the 35 districts in the state, in one district the percentage of children with severe or moderate anaemia is in less than 35, in 12 districts their percentage is between 35 and 50, and in 22 districts their percentage is more than 50. Districts with high prevalence of anaemia among children are situated mainly in central and eastern parts of the state.

Data on anaemia levels are available for over 11 thousand adolescent girls aged 10-19 years who constituted 60 percent of the sample. Table 4.16.3 shows anaemia levels for adolescent girls by selected background characteristics. In Maharashtra, 99 percent of adolescent girls have any anaemia. Seventeen percent of them are mildly anaemic, 53 percent are moderately anaemic and 29 percent are having severe anaemia. It has been found from the survey results that except severe anaemia, the percentage of girls in the remaining two categories of mild anaemia and moderate anaemia diminishes marginally with the increase in age from 10-14 to 15-19 years, but in case of any anaemia, the percent is same.

The incidence of any anaemia is higher (100 percent) among adolescent girls who are currently married compared to that among their unmarried counterpart (99 percent). The occurrence of anaemia in all the categories is found to be higher in rural areas than in urban areas. The prevalence of anaemia does not vary much with the educational attainment of girls. The level of anaemia is higher among Christian adolescent girls (100 percent). Adolescent girls from all castes are similarly likely to suffer from any anaemia. The adolescent girls from households with lower standard of living are slightly more likely to be anaemic

Of the 35 districts in the state, in 4 districts their percentage is between 50 and 75, and in 31 districts their percentage is more than 75. Districts with high prevalence of anaemia among adolescent girls are situated in most parts of the state.

Haemoglobin levels were measured for near about 1,500 pregnant women aged 15-44 years who constituted 76 percent of the sample. Table 4.16.4 shows the anaemia status among pregnant women according some selected background characteristics. Around 98 percent of the pregnant women in Maharashtra are suffering from some anaemia. Among pregnant women, 44 percent have mild anaemia, 52 percent who have moderate anaemia and around two percent have severe anaemia. Thus, although levels of any anaemia among pregnant women and adolescent girls are about the same, the prevalence of severe anaemia is substantially higher in adolescent girls (29 percent) than in pregnant women (2 percent). This may be because more stringent cut-off level for severe anaemia has been used in the case of adolescent girls (8 g/dl) than in the case of pregnant women (5 g/dl). Table 4.16.4 clearly shows that percentage of pregnant women with any anaemia rises steadily with the increase in the age of the pregnant women from 97 percent for the age group 15-19 to 100 percent in the age group 30-34 and decreases thereafter. The women, whether from rural or urban areas, are equally likely to suffer from any anaemia. The prevalence of anaemia decreases marginally with the level of educational attainment of the pregnant women. Pregnant women belonging to Buddhist religion are relatively more prone to be anaemic. Pregnant women among scheduled caste are more likely to be anaemic (80 percent) among all the caste/tribe categories. The standard of living in levels of anaemia is not found to be strong.

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Table 4.16.2 ANAEMIA AMONG CHILDREN

Percentage of children (age 0-71 months) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Maharashtra, 2002-04

Background characteristic	Parentage of children with any anaemia	Percentage of children with			Number of children
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age of child (in months)					
0-5	96.1	38.5	54.7	3.0	873
6-11	99.4	31.5	63.6	4.3	1,030
12-23	98.5	30.3	63.9	4.2	2,260
24-47	98.0	44.2	50.8	3.0	4,697
48-71	98.1	58.5	38.3	1.3	4,336
Birth order					
1	98.5	46.3	49.7	2.4	4,003
2-3	98.0	44.8	50.5	2.7	6,026
4-5	98.0	41.5	52.9	3.5	1,493
6+	98.6	44.4	51.9	2.4	413
Mother's not interviewed	97.3	47.7	46.7	2.9	1,261
Sex of the child					
Male	97.8	45.6	49.5	2.8	6,895
Female	98.4	44.7	51.0	2.6	6,301
Weight for age of children					
Normal	97.7	46.5	49.0	2.3	7,014
Below – 2 SD[1]	98.5	43.7	51.6	3.3	6,182
Below – 3 SD	98.5	39.5	54.1	4.9	1,897
Residence					
Rural	98.2	43.3	51.9	3.0	7,953
Urban	98.0	48.0	47.6	2.3	5,244
Mother's education					
Non-literate	98.4	40.4	54.7	3.3	3,862
0-9@years	98.3	45.2	50.3	2.8	5,436
10 years & above	97.6	50.9	45.1	1.6	2,623
Mother's not interviewed	97.3	47.8	46.5	3.0	1,275
Religion					
Hindu	98.0	45.0	50.3	2.6	10,288
Muslim	98.6	47.0	48.1	3.5	1,830
Christian	98.4	43.8	52.9	1.7	95
Buddhist	98.7	41.8	53.6	3.3	851
Jain	100.0	51.0	46.9	2.1	86
Other	(96.2)	(38.5)	(57.7)	(0.0)	45
Caste/tribe#					
Scheduled caste	98.8	41.4	54.7	2.6	2,061
Scheduled tribe	98.8	41.9	53.6	3.3	2,402
Other backward class	98.0	45.4	49.5	3.2	3,397
Other	97.6	48.5	46.8	2.3	5,229
Standard of living index					
Low	98.5	41.9	53.5	3.1	4,871
Medium	98.4	44.1	51.2	3.1	5,165
High	97.2	51.9	43.6	1.6	3,161
Total	98.1	45.2	50.2	2.7	13,196

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. [1] Includes children who are below – 3 SD from the International Reference median. @ Literate mothers with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. ( ) based on less than 50 unweighted cases. Total includes 1 case with missing information on sex of child that was not shown separately.

Table 4.16.3 ANAEMIA AMONG ADOLESCENT GIRLS

Percentage of adolescent girls[1] (age 10-19 years) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Maharashtra, 2002-04

Background characteristic	Parentage of adolescent with any anaemia	Percentage of adolescent with			Number of adolescent girls
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
10-14	99.2	18.1	53.0	28.2	5,983
15-19	99.3	16.5	51.9	30.9	5,210
Marital status					
Currently married	99.6	16.2	50.1	33.4	902
Currently not married	99.2	17.4	52.7	29.1	10,291
Residence					
Rural	99.4	17.0	52.6	29.8	6,312
Urban	99.1	17.8	52.3	28.9	4,881
Education					
Non-literate	99.4	14.6	47.4	37.3	752
0-9@years	99.2	17.4	52.2	29.7	8,511
10 years & above	99.3	18.2	55.8	25.3	1,930
Religion					
Hindu	99.2	16.6	52.3	30.3	8,679
Muslim	99.3	22.3	52.5	24.5	1,636
Christian	100.0	19.0	56.8	24.2	97
Buddhist	99.8	14.5	52.2	33.1	651
Jain	99.3	27.6	52.6	19.2	78
Other	100.0	9.4	71.5	19.2	50
Caste/tribe#					
Scheduled caste	99.8	14.1	49.9	35.8	1,674
Scheduled tribe	99.6	14.2	52.4	33.0	1,663
Other backward class	98.9	17.3	53.3	28.3	2,994
Other	99.1	19.7	53.0	26.3	4,768
Standard of living index					
Low	99.6	15.1	52.8	31.7	3,735
Medium	99.0	17.7	51.0	30.2	4,253
High	99.2	19.5	54.0	25.7	3,205
Total	99.2	17.3	52.5	29.4	11,193

Note: Haemoglobin level between 10.0 - 11.9 g/dl is mild anaemia, 8.0 - 9.9 g/dl is moderate anaemia and below 8.0 g/dl is severe anaemia. [1] Includes currently married women age 15-19 years who were not pregnant at the time of survey. @ Literate adolescent with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases.

Table 4.16.4 ANAEMIA AMONG PREGNANT WOMEN

Percentage of pregnant women (age 15-44 years) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Maharashtra, 2002-04

Background characteristic	Parentage of pregnant women with any anaemia	Percentage of pregnant women with			Number of pregnant women
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
15-19	97.0	44.4	50.9	1.7	283
20-24	99.4	44.6	53.0	1.8	756
25-29	96.4	41.9	52.8	1.7	290
30-34	100.0	49.8	46.8	3.4	64
Residence					
Rural	98.4	42.8	53.2	2.4	817
Urban	98.2	46.2	51.1	1.0	597
Education					
Non-literate	99.0	38.8	57.9	2.3	349
0-9@years	98.1	44.1	51.9	2.1	646
10 years & above	98.2	49.0	48.1	1.0	418
Religion					
Hindu	98.1	45.2	51.1	1.8	1,098
Muslim	98.8	35.4	61.4	2.0	206
Buddhist	100.0	48.0	50.5	1.5	89
Caste/tribe#					
Scheduled caste	100.0	47.1	52.2	0.7	233
Scheduled tribe	98.9	39.6	57.1	2.2	230
Other backward class	97.4	47.4	47.8	2.2	364
Other	98.0	43.2	52.9	1.9	572
Standard of living index					
Low	98.7	39.1	57.2	2.4	440
Medium	98.1	44.9	51.5	1.7	610
High	98.3	49.4	47.7	1.2	364
Total	98.3	44.3	52.3	1.8	1,414

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. @ Literate women with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. Total includes 20 & 1 cases in age group category 35-39 & 40-44, 20 cases of other religions and 15 cases in don't know castes that were not shown separately.

4.17 MANIPUR

4.17.1 Weight for Age of Children

In Manipur, weight was measured for 64 percent of children less than 6 years of age in sampled households. On the whole, data on weight are available for around three thousand children in the state. Table 4.17.1 shows the percentage of children under 6 years of age classified as undernourished, as measured by weight for age index by some selected background characteristics. In the following discussion, children whose weight in SD unit (Z score) is less than –3 would be referred to as 'severely underweight' and those with weight in SD unit less than -2 would be referred to simply as 'underweight'. Only two percent of the children in Manipur are severely underweight and 13 percent of the children are underweight. The proportion of undernourished children increases rapidly with the child's age upto 6-11 months and shows a decrease thereafter. Seven percent of the children in the age group 6-11 months are severely underweight whereas more than one third (32 percent) of the children in the same age group are underweight. By age 48-71 months the corresponding figures for severely underweight and underweight children stabilize at 2 and 7 percent, respectively.

Birth order of the child can also influence the nutritional status of the child. The second round of the RCH survey reveals that young children in families with six or more siblings are most likely to be underweight. Whereas 2 and 12 percent of children of first birth order are severely underweight and underweight respectively, the corresponding figures among children of birth order six or more are 3 and 13 percent, respectively. The observed sex differential in severe underweight and underweight children is marginal. The extent of underweight children, both severe underweight and underweight, is higher in rural areas compared to that in urban areas. While only one and eight percent children in urban areas are severely underweight and underweight, the corresponding figures for rural areas are 3 and 14 percent respectively.

Children's nutritional status is also expected to be influenced by mother's educational attainment. Children whose mothers are non-literate are marginal as likely to be severely underweight as compared to children whose mothers have ten or more years of schooling. A similar pattern is also found in the case of underweight children. The percentage is 13 among both children of non-literate mothers and children of mothers with ten or more years of schooling.

The results of the RCH survey show that Christian children tend to be slightly more underweight than 'other' children. The percentage of underweight children among other religions and Christians is respectively 5 and 16 percent. Children from scheduled tribe have the higher percentage of both severely underweight and underweight cases (4 and 16 percent, respectively), whereas children belonging to the 'schedule castes' category are relatively better off than scheduled tribe. As expected, household's standard of living index (SLI) is strongly correlated with the malnourishment of children as reflected through the weight for age anthropometric measure.

Table 4.17.1 WEIGHT FOR AGE OF CHILDREN

Percentage of children (age 0-71 months) classified as undernourished by weight for age anthropometric matrix of nutritional status according to some selected background characteristics, Manipur, 2002-04

Background characteristic	Weight for age		Number of children
	Percentage Below – 3 SD	Percentage Below – 2 SD[1]	
Age of child (in months)			
0-5	0.0	7.3	179
6-11	6.5	31.7	217
12-23	1.9	19.7	426
24-47	2.4	14.1	973
48-71	2.0	6.5	1,265
Birth order			
1	2.0	12.4	772
2-3	2.1	12.5	1,396
4-5	3.2	13.6	597
6+	2.6	13.4	186
Mother's not interviewed	1.1	8.9	107
Sex of the child			
Male	2.9	16.9	1,560
Female	1.7	8.1	1,499
Residence			
Rural	2.6	13.4	2,638
Urban	0.8	7.8	422
Mother's education			
Non-literate	1.9	13.1	990
0-9@years	2.4	12.3	1,175
10 years & above	2.9	13.1	858
Mother's not interviewed	(0.0)	(0.0)	36
Religion			
Hindu	0.7	8.4	841
Muslim	0.0	8.7	313
Christian	3.8	16.2	1728
Other	0.0	5.0	178
Caste/tribe#			
Scheduled caste	2.2	4.4	163
Scheduled tribe	3.7	16.0	1,722
Other backward class	0.1	5.9	732
Other	0.5	13.1	425
Standard of living index			
Low	3.0	14.4	1,987
Medium	1.0	10.7	928
High	0.3	0.8	144
Total	2.3	12.6	3,059

Note: This index is expressed in standard deviation units (SD) from the median of the International Reference Population. [1]Includes children who are below – 3 SD from the International Reference Population median. @ Literate mothers with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. ( ) Based on less than 50 unweighted cases.

Three percent of the children belonging to households of lower standard of living are severely underweight and 14 percent of the children in the same category are underweight. Whereas the corresponding figure for children belonging to high standard of living households are below one percent, respectively for both category.

Of the 5 districts in the state, in 4 districts the percentage of underweight children in less than 30 and in one district their percentage is between 30 and 50. North-eastern part of the state shows moderate prevalence of underweight children.

4.17.2 Anaemia among Children, Adolescent Girls, and Pregnant Women

In Manipur, haemoglobin level was measured for 43 percent of children under 6 years of age in sampled households. On the whole, the data on haemoglobin level are available for over 2 thousand children in the state. Table 4.17.2 shows the percent of children aged 0-71 months classified by the degree of anaemia and by selected background characteristics. Overall, 45 percent of the children have some level of anaemia, with 20 percent who are mildly anaemic, 24 percent who are moderately anaemic and 1 percent who are severely anaemic. Certain background characteristics of children show strong association with the level of anaemia. Some of them are: children aged 12-23 months (49 percent), children of higher birth order, more specifically, children of order first (48 percent), female children (45 percent), children who are severely underweight (50 percent), children from urban areas (46 percent), children of non-literate mothers (46 percent), Christian children (46 percent), children of schedule castes (50 percent) and children belonging to households characterized by low standard of living (46 percent). But even in the socio-economic groups with the lowest level of anaemia, over two fifth of children are anaemic. On the other hand, in no Socio-economic group the prevalence of severe anaemia is nearly one percent

Of the 5 districts in the state, the percentage of children with severe or moderate anaemia is in less than 35.

Data on anaemia levels are available for over the 1 thousand adolescent girls aged 10-19 years who constituted 33 percent of the sample. Table 4.17.3 shows anaemia levels for adolescent girls by selected background characteristics. In Manipur, 33 percent of adolescent girls have any anaemia. Twenty seven percent of them are mildly anaemic, 6 percent are moderately anaemic and below one percent are having severe anaemia. It has been found from the survey results that except severe anaemia, the percentage of girls in the remaining three categories of anaemia diminishes with the increase in age from 10-14 to 15-19 years. The incidence of any anaemia is 33 percent among adolescent girls who are currently unmarried. Except moderate anaemia, the occurrence of anaemia in the other categories is found to be higher in rural areas than in urban areas. The prevalence of anaemia does not vary much with the educational attainment of girls. The level of anaemia is higher among Muslim adolescent girls (49 percent). Adolescent girls from 'other backward class castes' are more likely to suffer from any anaemia. It is also interesting to note that adolescent girls from households with higher standard of living are slightly more likely to be anaemic.

Of all the 5 districts in the state, the percentage of adolescent girls with severe or moderate anaemia is in less than 50.

Haemoglobin levels were measured for nearly 172 pregnant women aged 15-44 years who constituted 45 percent of the sample. Table 4.17.4 shows the anaemia status among pregnant women according some selected background characteristics. Around 33 percent of the pregnant women in Manipur are suffering from some anaemia. Among pregnant women, 23 percent have mild anaemia, 9 percent who have moderate anaemia and less than one percent have severe anaemia. Thus, although levels of any anaemia among pregnant women and adolescent girls are about the same. Table 4.17.4 clearly shows that percentage of pregnant women with any anaemia bring down with the increase in the age of the pregnant women from 53 percent for the age group 20-24 to 18 percent in the age group 30-34. Women, from rural area (35 percent) and from urban areas 13 percent, are likely to experience any anaemia. The prevalence of anaemia is high (38 percent) with the 0-9 years of schooling of level of educational attainment of the pregnant women. The religious difference in levels of anaemia is found to strong. Pregnant women among scheduled tribe are more likely to be anaemic (40 percent). As expected, standard of living is associated with the anaemia status of the pregnant women. But the effect is very marginal. Around 33 percent pregnant women belonging to poor families are anaemic and 34 percent among women belonging to households with medium standard of living, there is only one percent difference between low and medium standard of living.

Table 4.17.2 ANAEMIA AMONG CHILDREN

Percentage of children (age 0-71 months) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Manipur, 2002-04

Background characteristic	Parentage of children with any anaemia	Percentage of children with			Number of children
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age of child (in months)					
0-5	48.0	17.1	30.8	0.0	119
6-11	41.8	14.4	25.8	1.7	151
12-23	48.8	21.3	26.3	1.2	287
24-47	46.9	23.8	22.8	0.3	668
48-71	41.3	18.3	22.0	1.0	850
Birth order					
1	47.9	20.6	26.9	0.3	544
2-3	45.5	21.4	23.0	1.1	926
4-5	42.1	18.3	23.6	0.2	412
6+	40.3	19.5	17.3	3.4	116
Mother's not interviewed	29.3	11.6	17.7	0.0	78
Sex of the child					
Male	44.2	20.4	22.8	1.0	1,094
Female	45.0	19.7	24.7	0.6	972
Weight for age of children					
Normal	44.6	19.9	24.0	0.7	1,841
Below – 2 SD[1]	44.2	21.7	21.0	1.4	235
Below – 3 SD	(50.0)	(18.8)	(31.3)	(0.0)	35
Residence					
Rural	44.3	19.9	23.6	0.9	1,792
Urban	46.0	21.7	24.1	0.2	285
Mother's education					
Non-literate	45.8	19.9	24.8	1.0	669
0-9@years	45.8	20.1	25.0	0.8	807
10 years & above	42.0	20.2	21.2	0.6	564
Mother's not interviewed	(23.1)	(13.5)	(9.6)	(0.0)	35
Religion					
Hindu	42.9	17.6	24.6	0.7	587
Muslim	45.1	17.8	26.1	1.2	213
Christian	45.8	22.7	22.5	0.6	1,167
Other	39.3	11.2	25.1	3.1	110
Caste/tribe#					
Scheduled caste	50.0	25.6	24.5	0.0	122
Scheduled tribe	45.6	22.3	22.7	0.6	1,167
Other backward class	41.7	12.4	28.3	1.1	477
Other	42.6	21.3	19.9	1.4	302
Standard of living index					
Low	46.0	21.7	23.5	0.8	1,362
Medium	41.4	17.2	23.3	0.9	620
High	43.7	16.0	27.8	0.0	93
Total	44.6	20.1	23.6	0.8	2,076

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. [1] Includes children who are below – 3 SD from the International Reference median. @ Literate mothers with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. ( ) based on less than 50 unweighted cases. Total includes 10 cases with missing information on sex of child that were not shown separately.

Table 4.17.3 ANAEMIA AMONG ADOLESCENT GIRLS

Percentage of adolescent girls[1] (age 10-19 years) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Manipur, 2002-04

Background characteristic	Parentage of adolescent with any anaemia	Percentage of adolescent with			Number of adolescent girls
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
10-14	34.1	27.1	6.8	0.2	566
15-19	31.8	26.6	4.9	0.2	535
Marital status					
Currently not married	33.0	26.9	5.9	0.2	1,101
Residence					
Rural	34.1	28.1	5.8	0.2	971
Urban	24.4	17.7	6.7	0.0	130
Education					
Non-literate	27.6	22.5	5.1	0.0	101
0-9@years	34.6	27.6	6.8	0.2	831
10 years & above	28.3	25.9	2.0	0.4	169
Religion					
Hindu	30.2	25.2	5.0	0.0	274
Muslim	49.4	39.4	10.0	0.0	96
Christian	29.7	23.9	5.4	0.3	665
Other	54.7	45.9	8.7	0.0	65
Caste/tribe#					
Scheduled caste	(14.8)	(11.1)	(3.7)	(0.0)	48
Scheduled tribe	30.7	24.7	5.7	0.3	667
Other backward class	40.9	33.7	7.3	0.0	208
Other	36.8	30.6	6.2	0.0	162
Standard of living index					
Low	31.0	24.6	6.1	0.3	687
Medium	35.9	29.6	6.1	0.1	348
High	38.4	35.6	2.8	0.0	67
Total	33.0	26.9	5.9	0.2	1,101

Note: Haemoglobin level between 10.0 - 11.9 g/dl is mild anaemia, 8.0 - 9.9 g/dl is moderate anaemia and below 8.0 g/dl is severe anaemia. [1] Includes currently married women age 15-19 years who were not pregnant at the time of survey. @ Literate adolescent with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. ( ) Based on less than 50 unweighted cases.

Table 4.17.4 ANAEMIA AMONG PREGNANT WOMEN

Percentage of pregnant women (age 15-44 years) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Manipur, 2002-04

Background characteristic	Parentage of pregnant women with any anaemia	Percentage of pregnant women with			Number of pregnant women
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
20-24	(52.9)	(38.2)	(14.7)	(0.0)	40
25-29	34.8	19.3	14.9	0.5	58
30-34	(18.2)	(12.1)	(3.0)	(3.0)	28
Residence					
Rural	35.1	23.8	10.9	0.4	142
Urban	(12.5)	(12.5)	(0.0)	(0.0)	30
Education					
Non-literate	(27.5)	(21.6)	(3.9)	(2.0)	38
0-9@years	38.1	26.7	11.0	0.5	68
10 years & above	27.2	16.1	11.2	0.0	65
Religion					
Christian	40.5	26.8	13.0	0.6	97
Other	22.8	19.0	3.8	0.0	75
Caste/tribe#					
Scheduled tribe	39.6	26.9	12.0	0.7	95
Other backward class	(28.6)	(21.4)	(7.1)	(0.0)	39
Standard of living index					
Low	33.3	22.1	10.6	0.7	96
Medium	34.3	26.3	8.0	0.0	67
Total	32.7	23.4	9.0	0.4	172

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. @ Literate women with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. ( ) Based on less number of cases. Total includes 13,23 & 10 cases in age group category 15-19, 35-39 & 40-44, 9 cases in High SLI and 15, 18 &4 cases in SC, Other & don't know caste that were not shown separately.

4.18 MEGHALAYA

4.18.1 Weight for Age of Children:

In Meghalaya, weight was measured for 77 percent of children under 6 years of age in sampled households. On the whole, data on weight are available for over 2 thousand children in the state. Table 4.18.1 shows the percentage of children under 6 years of age classified as undernourished, as measured by weight for age index by some selected background characteristics. In the following discussion, children whose weight in SD unit (Z score) is less than –3 would be referred to as 'severely underweight' and those with weight in SD unit less than -2 would be referred to simply as 'underweight'. Around (12 percent) of the children in Meghalaya are severely underweight and more than one-third (35 percent) of the children are underweight. The proportion of undernourished children increases rapidly with the child's age up to 6-11 months and shows a decrease thereafter. Around one-fifth (21 percent) of the children in the age group 6-11 months are severely underweight whereas more than two-fifth (42 percent) of the children in the same age group are underweight. By age 48-71 months the corresponding figures for severely underweight and underweight children stabilize at 7 and 31 percent, respectively.

Birth order of the child can also influence the nutritional status of the child. The second round of the RCH survey reveals that young children in families with six or more siblings are most likely to be underweight. Whereas 12 and 32 percent of children of first birth order are severely underweight and underweight respectively, the corresponding figures among children of birth order six or more are 13 and 35 percent, respectively. The observed sex differential both in severe underweight and underweight children is marginal. The extent of underweight children, both severe underweight and underweight, is higher in rural areas compared to that in urban areas. While around 10 and 33 percent children in urban areas are severely underweight and underweight, the corresponding figures for rural areas are 12 and 36 percent respectively.

Children's nutritional status is also expected to be influenced by mother's educational attainment. Children whose mothers are non-literate are about more likely to be severely underweight as compared to children whose mothers have ten or more years of schooling. A similar pattern is also found in the case of underweight children. The percentage of underweight children is 37 among non-literate mothers while it is 27 among mothers with ten or more years of schooling.

The results of the RCH survey show that Hindu children tend to be slightly more underweight than children belonging to 'other' religions. The percentage of underweight children among others religions and Hindus is respectively 26 and 35 percent. As expected, household's standard of living index (SLI) is strongly correlated with the malnourishment of children as reflected through the weight for age anthropometric measure.

Table 4.18.1 WEIGHT FOR AGE OF CHILDREN

Percentage of children (age 0-71 months) classified as undernourished by weight for age anthropometric matrix of nutritional status according to some selected background characteristics, Meghalaya, 2002-04

Background characteristic	Weight for age: Percentage Below – 3 SD	Weight for age: Percentage Below – 2 SD[1]	Number of children
Age of child (in months)			
0-5	4.1	14.0	265
6-11	21.1	41.9	246
12-23	17.6	44.9	426
24-47	12.5	38.6	881
48-71	7.3	30.5	849
Birth order			
1	11.7	32.2	458
2-3	11.6	36.9	823
4-5	10.5	34.6	657
6+	13.0	35.4	562
Mother's not interviewed	11.1	31.9	167
Sex of the child			
Male	13.3	38.4	1,389
Female	9.8	31.1	1,279
Residence			
Rural	12.1	35.5	1,971
Urban	10.2	33.3	697
Mother's education			
Non-literate	13.9	36.8	890
0-9@years	10.8	35.7	1329
10 years & above	8.1	26.8	274
Mother's not interviewed	11.2	32.2	174
Religion			
Hindu	12.4	35.0	50
Christian	12.3	36.2	2,271
Other	7.1	26.3	347
Caste/tribe#			
Scheduled tribe	11.6	34.9	2,591
Standard of living index			
Low	12.4	36.5	1,908
Medium	9.5	30.9	644
High	10.2	31.1	115
Total	11.6	34.9	2,668

Note: This index is expressed in standard deviation units (SD) from the median of the International Reference Population. [1]Includes children who are below – 3 SD from the International Reference Population median. @ Literate mothers with no years of schooling are also included# Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. Total includes 8 cases in scheduled castes, 2 cases in other backward caste and 19 cases in other castes that were not shown separately/

Nearly 12 percent of the children belonging to households of lower standard of living are severely underweight and more than one-third (37 percent) children of the same category are underweight. Whereas the corresponding figures for children belonging to high standard of living households are 10 and 31 percent, respectively.

Of the 3 districts in the state, in one district the percentage of underweight children in less than 30 and in two districts their percentage is between 30 and 50. Central part of the state shows moderate prevalence of underweight children.

4.18.2 Anaemia among Children and Adolescent Girls

In Meghalya, haemoglobin level was measured for 6 percent of children under 6 years of age in sampled households. On the whole, the data on haemoglobin level are available for 68 number of children in the state. Table 4.18.2 shows the percent of children aged 0-71 months classified by the degree of anaemia and by selected background characteristics. Overall, around 99 percent of the children have some level of anaemia, with 58 percent who are mildly anaemic, 35 percent who are moderately anaemic and 6 percent who are severely anaemic. Certain background characteristics of children show strong association with the level of anaemia. Some of them are: children aged 24-47 months male children, children from urban areas and children belonging to the household characteristics by medium standard of living.

Of the 2 districts in the state, in one district the percentage of children with severe or moderate anaemia is in less than 35 and in one district their percentage is between 35 and 50. Districts with moderate prevalence of anaemia among children are situated mainly in central part of the state.

Data on anaemia levels are available for around 2 hundred adolescent girls aged 10-19 years who constituted 11 percent of the sample. Table 4.18.3 shows anaemia levels for adolescent girls by selected background characteristics. In Meghalaya, overall 98 percent of adolescent girls have any anaemia. Fifty one percent of them are mildly anaemic, 37 percent are moderately anaemic and 9 percent are having severe anaemia. It has been found from the survey results that except of any anaemia and that of moderate anaemia, diminish gradually with the increase in age from 10-14 to 15-19 years. On the other hand, the extent of mild and severe anaemia increases with the increase in age. The rural-urban differential is realized for the incidence of mild and moderate anaemia. The highest level of anaemia are evident among adolescent girls belonging to other religious communities. It is interesting to note that adolescent girls from households with medium standard of living are slightly more likely to be anaemic.

Of the 2 districts in the state, in one districts the percentage of adolescent girls with severe or moderate anaemia is in less than 50 and in one district their percentage is between 50 and 75. Districts with moderate prevalence of anaemia among adolescent girls are situated mainly in south-central part of the state.

Table 4.18.2 ANAEMIA AMONG CHILDREN

Percentage of children (age 0-71 months) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Meghalaya, 2002-04

Background characteristic	Parentage of children with any anaemia	Percentage of children with			Number of children
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age of child (in months)					
24-47	(100.0)	(51.4)	(43.2)	(5.4)	26
48-71	(98.1)	(65.4)	(25.0)	(7.7)	38
Sex of the child					
Male	(100.0)	(59.3)	(35.2)	(5.6)	39
Female	(97.6)	(53.7)	(36.6)	(7.3)	29
Weight for age of children					
Normal	(100.0)	(56.5)	(35.5)	(8.1)	44
Residence					
Rural	(98.3)	(42.4)	(47.5)	(8.5)	42
Urban	(100.0)	(80.6)	(16.7)	(2.8)	26
Mother's education					
0-9@years	(98.0)	(62.0)	(32.0)	(4.0)	38
Religion					
Christian	98.3	53.3	37.2	7.8	52
Caste/tribe#					
Scheduled tribe	98.5	55.7	35.9	6.9	59
Standard of living index					
Low	(98.2)	(55.4)	(35.7)	(7.1)	39
Medium	(100.0)	(56.8)	(37.8)	(5.4)	28
Total	98.7	57.9	34.9	6.0	68

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. [1] Includes children who are below – 3 SD from the International Reference median. @ Literate mothers with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. Total includes 1, 1 and 3 cases in age group 0-5, 6-11 and 12-23 respectively, 18, 20, 14, 15 and 1 case in birth order 1, 2-3, 4-5, 6+ and mother's not interviewed respectively, 24 and 9 cases in weight for age of children below – 2 SD[1] and below – 3 SD respectively, 22, 7 and 1 case in mother's education non-literate, 10 years & above and mother's not interviewed respectively, 16 cases in religion other, 2 and 4 cases in scheduled caste and other, 1 case in standard of living index high that were not shown separately.

Table 4.18.3 ANAEMIA AMONG ADOLESCENT GIRLS

Percentage of adolescent girls[1] (age 10-19 years) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Meghalaya, 2002-04

Background characteristic	Parentage of adolescent with any anaemia	Percentage of adolescent with			Number of adolescent girls
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
10-14	98.8	49.6	40.2	9.0	138
15-19	95.2	54.5	30.3	10.3	60
Marital status					
Currently not married	97.7	51.1	37.7	8.9	195
Residence					
Rural	97.6	48.5	40.2	8.9	102
Urban	97.8	53.9	34.1	9.9	95
Education					
0-9@years	98.0	51.7	37.3	9.0	182
Religion					
Christian	97.2	53.6	35.1	8.5	161
Other	(100.0)	(40.0)	(46.7)	(13.3)	37
Caste/tribe#					
Scheduled tribe	97.5	53.6	35.8	8.2	182
Standard of living index					
Low	96.9	56.2	32.6	8.1	107
Medium	98.4	41.2	43.9	13.2	75
Total	97.7	51.1	37.2	9.4	198

Note: Haemoglobin level between 10.0 - 11.9 g/dl is mild anaemia, 8.0 - 9.9 g/dl is moderate anaemia and below 8.0 g/dl is severe anaemia. [1] Includes currently married women age 15-19 years who were not pregnant at the time of survey. @ Literate adolescent with no years of schooling are also included# Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. Total includes 2 currently married adolescent, 11 non-literate, 5 10 years and above in education and 6 SC, 7 in Other caste and 16 in high SLI that were not shown separately. ( ) Based on less than 50 unweighted cases.

4.19 MIZORAM

4.19.1 Weight for Age of Children:

In Mizoram, weight was measured for 43 percent of children under 6 years of age in sampled households. On the whole, data on weight are available for over 1 thousand children in the state. Table 4.19.1 shows the percentage of children under 6 years of age classified as undernourished as measured by weight for age index by some selected background characteristics. In the following discussion, children whose weight in SD unit (Z score) is less than –3 would be referred to as 'severely underweight' and those with weight in SD unit less than –2 would be referred to simply as 'underweight'. Less than one percent of the children in Mizoram are severely underweight and more than 15 percent of the children are underweight. The proportion of undernourished children increases rapidly with the child's age up to 24-47 in case of severe underweight and 12-23 months in case of underweight and shows a decrease thereafter. Around one percent of the children in the age group 24-47 months are severely underweight whereas (25 percent) of the children in the age group 12-23 are underweight. By age 48-71 months the corresponding figures for severely underweight and underweight children stabilize at 1 and 9 percent respectively

Birth order of the child can also influence the nutritional status of the child. The second round of the RCH survey reveals that young children in families with first order of birth siblings are most likely to be underweight, but it diminishes afterwards. The observed sex differential both in severe underweight and underweight children is marginal. The extent of underweight children, both severe underweight and underweight, is higher in rural areas compared to that in urban areas. While around 1 and 15 percent children in urban areas are severely underweight and underweight, the corresponding figures for rural areas are 1 and 16 percent respectively.

Children's nutritional status is also expected to be influenced by mother's educational attainment. Children whose mothers are non-literate are more likely to be severely underweight as compared to children whose mothers have nine years of schooling. But it is interesting to note that those mothers completed 10 years of schooling are more severe anaemic than non- literate women. On the other hand in case of under weight, children of non-literate women are likely to be more underweight as compared to children whose mother have ten or more years of schooling. The percentage of underweight children is 18 among non-literate mothers while it is 14 among mothers with ten or more years of schooling.

The results of the RCH survey show that children belonging to other religious groups tend to be slightly more underweight than Buddhist children. The percentage of underweight children among other religions and Buddhists is respectively 39 and 15 percent. Children from scheduled castes have the highest percentage of both severely underweight and underweight cases (2 and 16 percent, respectively) than scheduled castes. Their percentages are 0.7 and 15 percent respectively. Standard of living of the households does not reveal any conclusive pattern of differential in Mizoram. Of the 3 districts in the state, the percentage of underweight children is in less than 30.

Table 4.19.1 WEIGHT FOR AGE OF CHILDREN

Percentage of children (age 0-71 months) classified as undernourished by weight for age anthropometric matrix of nutritional status according to some selected background characteristics, Mizoram, 2002-04

Background characteristic	Weight for age		Number of children
	Percentage Below – 3 SD	Percentage Below – 2 SD[1]	
Age of child (in months)			
0-5	0.0	(2.4)	37
6-11	0.0	(19.6)	41
12-23	0.6	25.3	157
24-47	1.2	19.7	388
48-71	0.6	8.9	503
Birth order			
1	1.4	18.4	313
2-3	0.6	14.6	554
4-5	0.0	13.1	190
6+	(2.6)	(12.8)	40
Mother's not interviewed	(0.0)	(13.0)	30
Sex of the child			
Male	1.2	19.2	583
Female	0.4	10.8	544
Residence			
Rural	1.0	15.6	667
Urban	0.5	14.5	459
Mother's education			
Non-literate	1.1	18.4	124
0-9@years	0.6	15.4	742
10 years & above	1.3	13.5	253
Religion			
Christian	0.9	14.6	1,010
Buddhist	0.0	12.7	86
Other	(0.0)	(39.3)	31
Caste/tribe#			
Scheduled caste	1.9	16.4	72
Scheduled tribe	0.7	14.6	1,032
Standard of living index			
Low	1.0	15.7	452
Medium	0.7	15.7	468
High	0.7	12.9	206
Total	0.8	15.2	1,126

Note: This index is expressed in standard deviation units (SD) from the median of the International Reference Population. [1]Includes children who are below – 3 SD from the International Reference Population median. @ Literate mothers with no years of schooling are also included# Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. Total includes 8 cases in mothers not interviewed in mother's education, 12 cases in other backward caste and 2 cases in other castes that were not shown separately, ( ) Based on less than 50 unweighted cases.

4.19.2 Anaemia among Children, Adolescent Girls, and Pregnant Women

In Mizoram, haemoglobin level was measured for 25 percent of children under 6 years of age in sampled households. On the whole, the data on haemoglobin level are available for over 6 hundred children in the state. Table 4.19.2 shows the percent of children aged 0-71 months classified by the degree of anaemia and by selected background characteristics. Overall, 56 percent of the children have some level of anaemia, with 31 percent who are mildly anaemic, 24 percent who are moderately anaemic and 2 percent who are severely anaemic. Certain background characteristics of children show strong association with the level of anaemia. Some of them are: children aged 12-23 months (64 percent), children of higher birth order, more specifically, children of 1 birth order (62 percent), male children (57 percent), children who are normal (57 percent), children from urban areas (58 percent), children of non-literate mothers (63 percent), Buddhist children (66 percent), children of scheduled tribes (57 percent) and children belonging to households characterized by medium standard of living (57 percent). But even in the socio-economic groups with the lowest level of anaemia, over half of children are anaemic. On the other hand, in no socio-economic group the prevalence of severe anaemia is more than two percent. Of the 3 districts in the state, the percentage of children with severe or moderate anaemia is in less than 35.

Data on anaemia levels are available for over 5 hundred adolescent girls aged 10-19 years who constituted 24 percent of the sample. Table 4.19.3 shows anaemia levels for adolescent girls by selected background characteristics. In Mizoram, 45 percent of adolescent girls have any anaemia. Thirty three percent of them are mildly anaemic, 12 percent are moderately anaemic and less than 1 percent are having severe anaemia. It has been found from the survey results that except mild anaemia, the percentage of girls in the remaining three categories of anaemia diminishes with the increase in age from 10-14 to 15-19 years. The incidence of any anaemia is (45 percent) among adolescent girls who are currently unmarried. Except severe anaemia, the occurrence of anaemia in the other categories is found to be higher in rural areas than in urban areas. The prevalence of anaemia does not vary much with the educational attainment of girls. The level of anaemia is higher among Christian adolescent girls (45 percent). Adolescent girls from scheduled tribes are more likely to suffer from any anaemia. The adolescent girls from households with lower standard of living are slightly more likely to be anaemic. Of the 3 districts in the state, the percentage of adolescent girls with severe or moderate anaemia is in less than 50.

Haemoglobin levels were measured for nearly 100 pregnant women aged 15-44 years who constituted 45 percent of the sample. Table 4.19.4 shows the anaemia status among pregnant women according some selected background characteristics. Around 43 percent of the pregnant women in Mizoram are suffering from some anaemia. Among pregnant women, 24 percent have mild anaemia, 17 percent who have moderate anaemia and more than one percent has severe anaemia. Thus, although levels of any anaemia among pregnant women and adolescent girls are about the same, the prevalence of severe anaemia is slightly higher in pregnant women (2 percent) than in adolescent girls (0.7 percent).

This may be because more stringent cut-off level for severe anaemia has been used in the case of pregnant women (8 g/dl) than in the case of adolescent (5 g/dl). Table 4.19.4 clearly shows that that percentage of women with any anaemia rises steadily with the increase in the age of the pregnant women from 48 percent for the age group 20-24 to 32 percent in the age group 25-29. Except in the case of mild anaemia, women residing in rural areas are slightly more likely to experience anaemia compared to their urban counterparts. The prevalence of anaemia decreases with the higher level of educational attainment of the pregnant women. Pregnant women among scheduled tribes are (39 percent). It is also interesting to note that adolescent girls from households with medium standard of living are slightly more likely to be anaemic

Table 4.19.2 ANAEMIA AMONG CHILDREN

Percentage of children (age 0-71 months) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Mizoram, 2002-04

Background characteristic	Parentage of children with any anaemia	Percentage of children with			Number of children
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age of child (in months)					
6-11	(45.5)	(27.3)	(15.2)	(3.0)	25
12-23	63.6	35.0	22.8	5.8	92
24-47	57.3	25.8	30.2	1.3	219
48-71	53.9	32.2	20.9	0.8	299
Birth order					
1	62.4	29.5	30.9	1.9	181
2-3	55.0	32.3	21.0	1.7	317
4-5	51.9	26.0	23.4	2.5	117
6+	(55.6)	(37.0)	(18.5)	(0.0)	27
Sex of the child					
Male	57.3	29.7	25.1	2.5	318
Female	55.6	31.2	23.1	1.2	338
Weight for age of children					
Normal	56.6	30.3	24.4	1.9	549
Below – 2 SD[1]	55.5	31.7	22.5	1.3	108
Residence					
Rural	55.2	27.8	25.4	2.1	386
Urban	58.1	34.5	22.1	1.5	270
Mother's education					
Non-literate	63.0	16.3	43.3	3.5	81
0-9@years	54.8	31.7	21.7	1.4	444
10 years & above	57.9	34.9	20.8	2.2	129
Religion					
Christian	54.5	31.8	21.3	1.4	570
Buddhist	66.0	14.9	46.8	4.3	66
Caste/tribe#					
Scheduled caste	(63.6)	(33.3)	(30.3)	(0.0)	43
Scheduled tribe	55.6	30.0	23.6	2.0	599
Standard of living index					
Low	56.1	23.4	30.2	2.5	256
Medium	56.8	36.3	19.2	1.3	276
High	56.1	32.2	22.4	1.5	125
Total	56.4	30.5	24.1	1.8	656

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. [1] Includes children who are below – 3 SD from the International Reference median. @ Literate mothers with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. ( ) Based on less than 50 unweighted cases. Total includes 15 cases with missing information on birth order were not shown separately. Total includes 22 cases in age group 0-5, 3 cases in birth order mother's not interviewed, 6 cases in w eight for age of children below – 3 SD, 3 cases in mother's education mother's not interviewed, 20 cases in religion other, 8 and 2 cases in caste Other backward class and other respectively that were not shown separately.

Table 4.19.3 ANAEMIA AMONG ADOLESCENT GIRLS

Percentage of adolescent girls[1] (age 10-19 years) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Mizoram, 2002-04

Background characteristic	Parentage of adolescent with any anaemia	Percentage of adolescent with			Number of adolescent girls
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
10-14	47.4	31.5	14.9	1.0	328
15-19	41.7	35.0	6.6	0.2	218
Marital status					
Currently not married	45.1	32.9	11.6	0.7	546
Residence					
Rural	47.4	35.2	12.1	0.1	292
Urban	42.5	30.2	10.9	1.3	254
Education					
Non-literate	(55.0)	(20.0)	(30.0)	(5.0)	30
0-9@years	46.9	34.5	11.9	0.5	445
10 years & above	37.7	32.8	4.8	0.0	72
Religion					
Christian	44.7	32.7	11.3	0.7	513
Other	(52.6)	(36.8)	(15.8)	(0.0)	33
Caste/tribe#					
Scheduled caste	(41.2)	(35.3)	(5.9)	(0.0)	39
Scheduled tribe	44.5	31.3	12.4	0.8	488
Standard of living index					
Low	48.3	29.7	17.0	1.6	188
Medium	43.2	33.5	9.4	0.3	226
High	43.9	36.4	7.5	0.0	132
Total	45.1	32.9	11.6	0.7	546

Note: Haemoglobin level between 10.0 - 11.9 g/dl is mild anaemia, 8.0 - 9.9 g/dl is moderate anaemia and below 8.0 g/dl is severe anaemia. [1] Includes currently married women age 15-19 years who were not pregnant at the time of survey. @ Literate adolescent with no years of schooling are also included # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. Total includes 10 cases of OBC and 4 cases of other castes that were not shown separately. ( ) Based on less than 50 unweighted cases.

Table 4.19.4 ANAEMIA AMONG PREGNANT WOMEN

Percentage of pregnant women (age 15-44 years) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Mizoram, 2002-04

Background characteristic	Parentage of pregnant women with any anaemia	Percentage of pregnant women with			Number of pregnant women
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
20-24	(47.5)	(27.5)	(17.5)	(2.5)	43
25-29	(32.1)	(21.4)	(10.7)	(0.0)	26
Residence					
Rural	42.4	22.9	16.7	2.8	52
Urban	(40.8)	(26.5)	(14.3)	(0.0)	44
Education					
0-9@years	43.3	25.5	15.4	2.4	60
10 years & above	(34.6)	(19.2)	(15.4)	(0.0)	26
Religion					
Christian	43.0	26.1	16.9	0.0	89
Caste/tribe#					
Scheduled tribe	39.1	22.5	15.0	1.6	91
Standard of living index					
Low	(41.7)	(22.2)	(16.7)	(2.8)	38
Medium	(43.6)	(25.6)	(17.9)	(0.0)	40
Total	42.8	24.2	17.1	1.5	96

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. @ Literate women with no years of schooling are also included# Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. ( ) Based on less than 50 unweighted cases. Total includes 11, 10, 4 & 3 cases in age group category 15-19, 30-34, 35-39 & 40-44, 7 cases in other religion, 10 cases in non literate category, 4 & 1 cases in SC & Other Backward Class and 19 cases in High SLI that were not shown separately.

4.20 NAGALAND

4.20.1 Weights for Age of Children:

In Nagaland, weight was measured for 34 percent of children under 6 years of age in sampled households. On the whole, data on weight are available for nearly eight hundred children in the state. Table 4.20.1 shows the percentage of children under 6 years of age classified as undernourished, as measured by weight for age index by some selected background characteristics. In the following discussion, children whose weight in SD unit (Z score) is less than –3 would be referred to as 'severely underweight' and those with weight in SD unit less than – 2 would be referred to simply as 'underweight'. Around eight percent of the children in Nagaland are severely underweight and more than one-fifth (21 percent) of the children are underweight. The proportion of undernourished children increases rapidly with the child's age up to 12-23 months and shows a decrease thereafter. Around seventeen percent of the children in the age group 12-23 months are severely underweight whereas more than one-third (39 percent) of the children in the same age group are underweight. By age 48-71 months the corresponding figures for severely underweight and underweight children stabilize at 3 and 12 percent, respectively.

Birth order of the child can also influence the nutritional status of the child. The second round of the RCH survey reveals that young children in families with six or more siblings are most likely to be underweight. Whereas 8 and 19 percent of children of first birth order are severely underweight and underweight respectively, the corresponding figures among children of birth order six or more are 15 and 30 percent, respectively. Sex differential in both the categories of severely underweight and underweight is pretty high and female children are at disadvantageous position vis-à-vis male children. The extent of underweight children, both severe underweight and underweight, is higher in urban areas compared to that in rural areas. While around 8 and 19 percent children in rural areas are severely underweight and underweight, the corresponding figures for urban areas are 8 and 25 percent respectively.

Children's nutritional status is also expected to be influenced by mother's educational attainment. However, in Nagaland, the overall anaemia status of the children is not varying mush by the educational attainment of the mother.

The results of the RCH survey show that children of 'other' religion communities tend to be more underweight than Christian children. The percentage of underweight children among Christians and other religions is respectively 20 and 56 percent. Household's standard of living is also not strongly correlated with the malnourishment of children as reflected though the weight for age anthropometric measure. In all the categories around 8 percent of children are severely underweight and more than one-fifth of the children are underweight. In all the 4 surveyed districts in the state, the percentage of underweight children in less than 30.

Table 4.20.1 WEIGHT FOR AGE OF CHILDREN

Percentage of children (age 0-71 months) classified as undernourished by weight for age anthropometric matrix of nutritional status according to some selected background characteristics, Nagaland, 2002-04

Background characteristic	Weight for age		Number of children
	Percentage Below – 3 SD	Percentage Below – 2 SD[1]	
Age of child (in months)			
0-5	(0.0)	(3.3)	38
6-11	(13.3)	(26.7)	23
12-23	17.1	38.9	87
24-47	12.5	29.1	276
48-71	3.0	12.1	339
Birth order			
1	8.3	19.1	156
2-3	7.4	23.4	317
4-5	8.1	18.2	183
6+	14.8	29.6	63
Mother's not interviewed	(4.2)	(16.7)	44
Sex of the child			
Male	5.8	16.8	389
Female	10.7	26.1	375
Residence			
Rural	8.1	19.4	510
Urban	8.2	25.2	254
Mother's education			
Non-literate	8.9	26.0	136
0-9@years	7.3	22.9	399
10 years & above	10.8	17.0	182
Mother's not interviewed	(2.9)	(8.8)	47
Religion			
Christian	7.7	19.7	733
Other	(16.7)	(55.6)	31
Caste/tribe#			
Scheduled tribe	7.9	19.6	720
Standard of living index			
Low	8.4	22.6	414
Medium	7.6	20.0	264
High	8.7	19.7	86
Total	8.2	21.4	763

Note: This index is expressed in standard deviation units (SD) from the median of the International Reference Population. [1]Includes children who are below – 3 SD from the International Reference Population median. @ Literate mothers with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. Total includes 1 case with missing information on birth order was not shown separately. Total includes 10 cases in scheduled caste, 1 case in other backward caste and 2 cases in other castes that were not shown separately, ( ) Based on less than 50 unweighted cases.

4.20.2 Anaemia among Children and Adolescent Girls

In Nagaland, haemoglobin level was measured for 22 percent of children under 6 years of age in sampled households. On the whole, the data on haemoglobin level are available for over 2 hundred children in the state. Table 4.20.2 shows the percent of children aged 0-71 months classified by the degree of anaemia and by selected background characteristics. Overall, more than 87 percent of the children have some level of anaemia, with 55 percent who are mildly anaemic, 31 percent who are moderately anaemic and 2 percent who are severely anaemic. Certain background characteristics of children show association with the level of anaemia. Some of them are: children aged 48-71 months (89 percent), children of higher birth order, more specifically, children of 1st birth order (97 percent), male children (91 percent), children who have normal weight (88 percent), children from urban areas (92 percent), children of 10 years and above (95 percent), Christian children (87 percent), children of schedule tribes (87 percent) and children belonging to households characterized by low standard of living (87 percent). Of the 4 districts in the state, the percentage of children with severe or moderate anaemia is in less than 35.

Data on anaemia levels are available for about 7 hundred adolescent girls aged 10-19 years who constituted 36 percent of the sample. Table 4.20.3 shows anaemia levels for adolescent girls by selected background characteristics. In Nagland, overall, 94 percent of adolescent girls have any anaemia. Thirty percent of them are mildly anaemic, 42 percent are moderately anaemic and 21 percent are having severe anaemia. It has been found from the survey results that except moderate anaemia, the percentage of girls in the remaining three categories of anaemia diminishes with the increase in age from 10-14 to 15-19 years. Except mild anaemia, the occurrence of anaemia in the other categories is found to be higher in urban areas than in rural areas. The prevalence of anaemia among adolescent girls decreases with the increase in educational attainment. It is interesting to note that adolescent girls from households with medium and higher standard of living are slightly more likely to be anaemic. In all the 4 surveyed districts in the state, the percentage of adolescent girls is between 50 and 75.

Table 4.20.2 ANAEMIA AMONG CHILDREN

Percentage of children (age 0-71 months) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Nagaland, 2002-04

Background characteristic	Parentage of children with any anaemia	Percentage of children with			Number of children
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age of child (in months)					
24-47	81.3	43.4	34.5	3.4	87
48-71	89.3	60.5	28.0	0.8	136
Birth order					
1	96.9	58.8	37.1	1.0	50
2-3	89.6	55.9	29.9	3.8	95
4-5	82.1	54.0	26.5	1.6	65
Sex of the child					
Male	91.4	59.4	29.1	2.9	122
Female	83.1	49.9	32.0	1.3	121
Weight for age of children					
Normal	87.7	54.7	31.3	1.6	218
Below – 2 SD[1]	(85.7)	(57.1)	(21.4)	(7.1)	25
Residence					
Rural	85.3	55.9	27.7	1.6	169
Urban	91.9	51.7	36.8	3.3	75
Mother's education					
Non-literate	(86.7)	(66.7)	(20.0)	(0.0)	34
0-9@years	85.8	54.7	28.8	2.3	128
10 years & above	94.6	54.6	37.5	2.4	68
Religion					
Christian	86.8	54.5	30.1	2.2	234
Caste/tribe#					
Scheduled tribe	86.6	55.3	29.0	2.2	231
Standard of living index					
Low	86.7	55.4	29.4	1.8	135
Medium	84.8	48.7	32.8	3.3	81
High	(96.6)	(65.5)	(31.0)	(0.0)	27
Total	87.3	54.7	30.5	2.1	243

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. [1] Includes children who are below – 3 SD from the International Reference median. @ Literate mothers with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. ( ) based on less than 50 unweighted cases. Total includes 2 cases with missing information on birth order were not shown separately. Total includes 8, 2 and 10 cases in age group 0-5, 6-11and 12-23 respectively, 21 and 11cases in birth order 6+ and mother's not interviewed respectively, 13 cases in weight for age of children below – 3 SD, 12 cases in mother's education mother's not interviewed, 9 cases in religion other, 1, 4 and 1 case in scheduled caste, Other backward class and other caste respectively that were not shown separately.

Table 4.20.3 ANAEMIA AMONG ADOLESCENT GIRLS

Percentage of adolescent girls[1] (age 10-19 years) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Nagaland, 2002-04

Background characteristic	Parentage of adolescent with any anaemia	Percentage of adolescent with			Number of adolescent girls
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
10-14	94.2	30.6	39.5	24.1	401
15-19	92.7	29.9	46.2	16.7	283
Marital status					
Currently not married	93.4	30.1	42.1	21.2	663
Residence					
Rural	92.2	30.4	41.7	20.1	486
Urban	97.0	30.1	43.7	23.1	198
Education					
Non-literate	100.0	31.8	56.0	12.2	45
0-9@years	93.4	29.0	41.3	23.0	542
10 years & above	91.6	36.8	41.1	13.7	97
Religion					
Christian	93.4	30.1	42.7	20.6	664
Caste/tribe#					
Scheduled tribe	93.4	30.2	42.3	20.8	662
Standard of living index					
Low	92.2	29.4	41.0	21.8	338
Medium	95.4	29.0	43.8	22.6	248
High	93.8	37.1	42.8	13.9	97
Total	93.6	30.3	42.3	21.0	683

Note: Haemoglobin level between 10.0 - 11.9 g/dl is mild anaemia, 8.0 - 9.9 g/dl is moderate anaemia and below 8.0 g/dl is severe anaemia. [1] Includes currently married women age 15-19 years who were not pregnant at the time of survey. @ Literate adolescent with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. Total includes 19 currently married adolescent and, 1 case of missing, and 5 cases of schedule caste, 1 case of Other Backward Class and 8 cases of other castes and 19 cases of other religions that were not shown separately.

4.21 ORISSA

4.21.1 Weight for Age of Children:

In Orissa, weight was measured for 69 percent of children under 6 years of age in sampled households. On the whole, data on weight are available for nearly 15 thousand children in the state. Table 4.21.1 shows the percentage of underweight children under 6 years of age classified as undernourished, as measured by weight for age index by some selected background characteristics. In the following discussion, children whose weight in SD unit (Z score) is less than –3 would be referred to as 'severely underweight' and those with weights in SD unit less than – 2 would be referred to simply as 'underweight'. More than one-tenth (15 percent) of the children in Orissa are severely underweight and more than two-fifth (43 percent) of the children are underweight. The proportion of undernourished children increases rapidly with the child's age upto 12-23 months and shows a decrease thereafter. Around one-fifth (22 percent) of the children in this age group 12-33 months are severely underweight whereas more than half (51 percent) of the children in the same age group are underweight. By age 48-71 months the corresponding figures for severely and moderately underweight children stabilize at 12 and 42 percent, respectively.

Birth order of the child can also influence the nutritional status of the child. The second round of the RCH survey reveals that young children in families with six or more siblings are most likely to be underweight. Whereas 13 and 40 percent of children of first birth order are severely underweight and underweight respectively, the corresponding figures among children of birth order six or more are 22 and 53 percent, respectively. The observed sex differential both in severe underweight and underweight children is marginal. The extent of underweight children, both severe underweight and underweight, is higher in rural areas compared to that in urban areas. While around 14 percent and 38 children in urban areas are severely underweight and underweight, the corresponding figures for rural areas are 16 and 44 percent respectively.

Children's nutritional status is also expected to be influenced by mother's educational attainment. Children whose mothers are non-literate are about more than twice as likely to be severely underweight as compared to children whose mothers have ten or more years of schooling. A similar pattern is also found in the case of underweight children. The percentage of underweight children is 51 among non-literate mothers while it is 28 among mothers with ten or more years of schooling.

The results of the RCH survey show that Christian children tend to be slightly more underweight than Hindu children. The percentage of underweight children among Hindus and Christians is respectively 43 and 49 percent. Children from scheduled tribes have the highest percentage of both severely and underweight cases (20 and 50 percent, respectively), whereas children belonging to the 'other caste' category are relatively better off than others. As expected, household's standard of living index (SLI) is strongly correlated with the malnourishment of children as reflected through the weight for age anthropometric measures.

Table 4.21.1 WEIGHT FOR AGE OF CHILDREN

Percentage of children (age 0-71 months) classified as undernourished by weight for age anthropometric matrix of nutritional status according to some selected background characteristics, Orissa, 2002-04

Background characteristic	Weight for age		Number of children
	Percentage Below – 3 SD	Percentage Below – 2 SD[1]	
Age of child (in months)			
0-5	4.0	17.7	1,148
6-11	15.3	37.5	1,263
12-23	21.9	50.9	2,344
24-47	17.3	46.8	5,061
48-71	12.4	42.0	5,182
Birth order			
1	13.1	40.1	4,078
2-3	15.4	44.1	6,248
4-5	19.0	49.5	2,316
6+	22.4	52.2	840
Mother's not interviewed	9.9	29.1	1,517
Sex of the child			
Male	16.1	43.6	7,468
Female	14.3	41.9	7,531
Residence			
Rural	15.5	44.2	11,455
Urban	14.1	38.2	3,544
Mother's education			
Non-literate	19.6	50.6	6,895
0-9@years	12.6	41.5	4,707
10 years & above	8.9	27.7	1754
Mother's not interviewed	10.4	29.5	1643
Religion			
Hindu	15.2	42.8	14,256
Muslim	13.7	38.4	379
Christian	17.7	49.3	308
Other	13.1	29.0	55
Caste/tribe#			
Scheduled caste	17.0	45.5	2,829
Scheduled tribe	19.9	50.3	3,864
Other backward class	13.8	40.6	5,226
Other	9.8	34.3	3,002
Standard of living index			
Low	17.5	47.2	10,049
Medium	11.3	37.4	3,376
High	8.4	26.1	1,574
Total	15.2	42.8	14,999

Note: This index is expressed in standard deviation units (SD) from the median of the International Reference Population. [1]Includes children who are below – 3 SD from the International Reference Population median. @ Literate mothers with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases.

More than one-sixth (18 percent) of the children belonging to households of lower standard of living are severely underweight and around 47 percent of the children in the same category are underweight. Whereas the corresponding figures for children belonging to high standard of living households are 8 and 26 percent, respectively.

Of the 30 districts in the state, in 7 districts the percentage of underweight children in less than 30, in 13 districts their percentage is between 30 and 50, and in 10 districts their percentage is more than 50. North and southern parts of the state shows high prevalence of underweight children.

4.21.2 Anaemia among Children, Adolescent Girls, and Pregnant Women

In Orissa, haemoglobin level was measured for 62 percent of children under 6 years of age in sampled households. On the whole, the data on haemoglobin level are available for over 10 thousand children in the state. Table 4.21.2 shows the percent of children aged 0-71 months classified by the degree of anaemia and by selected background characteristics. Overall, 98 percent of the children have some level of anaemia, with 54 percent who are mildly anaemic, 41 percent who are moderately anaemic and 3 percent who are severely anaemic. Certain background characteristics of children show strong association with the level of anaemia. Some of them are: children aged 6-11 months (100 percent), children of higher birth order, more specifically, children of order two to three (98 percent), male children ((98 percent), children who are underweight and severely underweight (98 percent), children from rural areas (98 percent), children with non-literate mothers (98 percent), Hindu and Muslim children (98 percent), children of scheduled caste and scheduled tribes (100 percent) and children belonging to households characterized by low standard of living (98 percent). But even in the socio-economic groups with the lowest level of anaemia, over four-fifth of children are anaemic. On the other hand, in no socio-economic group the prevalence of severe anaemia is more than five percent.

Of the 30 districts in the state, in 5 districts the percentage of children with severe or moderate anaemia is in less than 35, in 14 districts their percentage is between 35 and 50, and in 11 districts their percentage is more than 50. Districts with high prevalence of anaemia among children are situated mainly in south and western parts of the state.

Data on anaemia levels are available for more than 8 thousand adolescent girls aged 10-19 years who constituted 60 percent of the sample. Table 4.21.3 shows anaemia levels for adolescent girls selected background characteristics. In Orissa, 98 percent of adolescent girls have any anaemia. Twenty percent of them are mildly anaemic, 57 percent are moderately anaemic and 27 percent are having severe anaemia. It has been found from the survey results that the percentage of girls in all categories of anaemia diminishes with the increase in age from 10-14 to 15-19 years. The incidence of any anaemia is higher (100 percent) among adolescent girls who are currently married compared to that among their unmarried counterpart (99 percent).

Except severe anaemia, the occurrence of anaemia in the other categories is found to be higher in rural areas than in urban areas. Anaemia among adolescents decreases with the increase in educational attainment from 98 percent among non-literate adolescent girls to 97 percent among those who have completed ten or more years of education. The level of anaemia is higher among Christian adolescent girls (100 percent). Adolescent girls from scheduled caste and scheduled tribe are more likely to suffer from any anaemia. Adolescent girls from households with low standard of living are more likely to be anaemic.

Of the 30 districts in the state, in 1 district the percentage of adolescent girls with severe or moderate anaemia is in less than 50, in 11 districts their percentage is between 50 and 75, and in 18 districts their percentage is more than 75. Districts with high prevalence of anaemia among adolescent girls are situated mainly in north-western and south-western parts of the state.

Haemoglobin levels were measured for nearly 800 pregnant women aged 15-44 years who constituted 54 percent of the sample. Table 4.21.4 shows the anaemia status among pregnant women according some selected background characteristics. Around 98 percent of the pregnant women in Orissa are suffering from some sort of anaemia. Among pregnant women, 49 percent have mild anaemia, 45 percent who have moderate anaemia and 3 percent have severe anaemia. Thus, although levels of any anaemia among pregnant women and adolescent girls are about the same, the prevalence of severe anaemia is substantially higher in adolescent girls (27 percent) than in pregnant women (4 percent). This may be because more stringent cut-off level for severe anaemia has been used in the case of adolescent girls (8 g/dl) than in the case of pregnant women (5 g/dl). Table 4.21.4 clearly shows that percentage of pregnant women with any anaemia decreases steadily with the increase in the age of the pregnant women from 99 percent for the age group 15-19 to 95 percent in the age group 30-34. Except mild and any anaemia, women residing in rural areas are slightly more likely to experience anaemia compared to their urban counterparts. The prevalence of anaemia increases steadily with the level of educational attainment of the pregnant women. Pregnant women among scheduled caste are more likely to be anaemic (99 percent) among all the caste/tribe categories. It is interesting to note that pregnant women from households with higher standard of living are slightly more likely to be anaemic. Around 97 percent pregnant women belonging to poor families are anaemic compared to 100 percent among women belonging to households with higher standard of living.

Table 4.21.2 ANAEMIA AMONG CHILDREN

Percentage of children (age 0-71 months) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Orissa, 2002-04

Background characteristic	Parentage of children with any anaemia	Percentage of children with			Number of children
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age of child (in months)					
0-5	97.7	34.8	56.7	6.2	676
6-11	99.7	37.2	56.6	6.0	853
12-23	99.1	41.8	52.0	5.3	1,706
24-47	97.6	56.2	39.1	2.3	3,864
48-71	96.6	63.2	31.6	1.8	3,906
Birth order					
1	97.7	56.0	38.6	3.1	2,894
2-3	98.1	54.1	40.7	3.3	4,629
4-5	97.4	49.5	44.9	3.0	1,693
6+	96.9	44.6	48.0	4.2	594
Mother's not interviewed	96.6	56.7	37.6	2.3	1,194
Sex of the child					
Male	97.8	54.3	40.1	3.4	5,426
Female	97.5	53.1	41.6	2.8	5,579
Weight for age of children					
Normal	97.5	55.7	39.1	2.7	6,600
Below – 2 SD[1]	97.8	50.6	43.5	3.8	4,405
Below – 3 SD	98.4	45.9	47.5	4.9	1,473
Residence					
Rural	98.0	53.2	41.7	3.1	8,741
Urban	96.3	55.5	37.7	3.2	2,264
Mother's education					
Non-literate	97.8	47.9	45.9	4.1	5,106
0-9@years	97.8	57.8	37.8	2.3	3,441
10 years & above	97.3	62.9	32.2	2.2	1,210
Mother's not interviewed	96.7	57.2	37.0	2.5	1,247
Religion					
Hindu	97.7	54.0	40.7	3.1	10,518
Muslim	98.4	54.6	39.1	4.6	258
Christian	97.0	36.4	55.6	5.1	195
Other	(89.7)	(58.6)	(31.0)	(0.0)	34
Caste/tribe#					
Scheduled caste	97.9	47.1	46.5	4.2	2,051
Scheduled tribe	97.9	46.9	46.7	4.3	2,803
Other backward class	97.3	57.0	38.2	2.2	3,873
Other	97.9	62.2	33.4	2.2	2,223
Standard of living index					
Low	98.0	50.2	44.2	3.6	7,525
Medium	97.3	60.7	34.6	2.1	2,412
High	96.2	62.6	31.3	2.2	1,068
Total	97.6	53.7	40.9	3.1	11,005

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. [1] Includes children who are below – 3 SD from the International Reference median. @ Literate mothers with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. Total includes 162, 21 cases with missing information on birth order, mother's education respectively that were not shown separately.

Table 4.21.3 ANAEMIA AMONG ADOLESCENT GIRLS

Percentage of adolescent girls[1] (age 10-19 years) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Orissa, 2002-04

Background characteristic	Parentage of adolescent with any anaemia	Percentage of adolescent with			Number of adolescent girls
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
10-14	98.3	19.2	51.7	27.4	4,530
15-19	98.2	20.0	51.1	27.1	4,052
Marital status					
Currently married	98.9	14.2	53.4	31.3	586
Currently not married	98.2	20.0	51.2	27.0	7,993
Residence					
Rural	98.8	20.0	51.7	27.0	6,273
Urban	96.9	18.5	50.5	27.8	2,310
Education					
Non-literate	98.4	15.9	49.3	33.2	1,642
0-9@years	98.4	20.5	52.1	25.8	5,938
10 years & above	97.4	20.4	50.6	26.3	1,003
Religion					
Hindu	98.4	19.7	51.3	27.3	8,133
Muslim	93.8	21.5	52.0	20.3	299
Christian	99.5	7.4	53.9	38.2	131
Caste/tribe#					
Scheduled caste	99.0	17.6	52.3	29.2	1,626
Scheduled tribe	99.0	14.1	49.6	35.3	1,576
Other backward class	97.9	22.2	50.3	25.4	3,176
Other	97.9	21.2	54.2	22.5	2,161
Standard of living index					
Low	98.7	18.2	51.0	29.5	5,247
Medium	97.5	22.4	51.4	23.8	2,179
High	97.5	20.8	53.4	23.3	1,156
Total	98.3	19.6	51.4	27.2	8,582

Note: Haemoglobin level between 10.0 - 11.9 g/dl is mild anaemia, 8.0 - 9.9 g/dl is moderate anaemia and below 8.0 g/dl is severe anaemia. [1] Includes currently married women age 15-19 years who were not pregnant at the time of survey. @ Literate adolescent with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. Total includes 19 cases of other religion that were not shown separately.

Table 4.21.4 ANAEMIA AMONG PREGNANT WOMEN

Percentage of pregnant women (age 15-44 years) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Orissa, 2002-04

Background characteristic	Parentage of pregnant women with any anaemia	Percentage of pregnant women with			Number of pregnant women
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
15-19	99.1	48.7	48.0	2.4	169
20-24	96.8	49.8	42.8	4.2	303
25-29	97.8	50.2	43.9	3.7	213
30-34	95.4	34.6	56.9	3.9	80
Residence					
Rural	97.4	47.6	45.7	4.1	608
Urban	97.8	51.4	43.8	2.6	180
Education					
Non-literate	97.5	39.9	51.8	5.7	363
0-9@years	97.2	55.1	39.4	2.7	300
10 years & above	98.3	57.4	40.4	0.5	125
Religion					
Hindu	97.5	48.5	45.3	3.7	763
Caste/tribe#					
Scheduled caste	98.7	45.0	50.3	3.4	145
Scheduled tribe	97.0	42.0	51.2	3.9	192
Other backward class	96.2	47.4	43.1	5.7	271
Other	98.9	59.4	38.6	1.0	178
Standard of living index					
Low	96.8	44.0	47.9	5.0	510
Medium	98.1	58.8	37.2	2.1	190
High	100.0	52.1	47.7	0.3	88
Total	97.5	48.5	45.3	3.8	787

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. @ Literate women with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. Total includes 12 & 10 cases in age group category 35-39 & 40-44, 24 cases of other religions and 2 cases in don't know castes that were not shown separately.

4.22 PUNJAB

4.22.1 Weight for Age of Children:

In Punjab, weight was measured for 75 percent of children under 6 years of age in sampled households. On the whole, data on weight are available for nearly 8 thousand children in the state. Table 4.22.1 shows the percentage of children under 6 years of age classified as undernourished, as measured by weight for age index by some selected background characteristics. In the following discussion, children whose weight in SD unit (Z score) is less than –3 would be referred to as 'severely underweight' and those with weight in SD unit less than – 2 would be referred to simply as 'underweight'. More than one-tenth (14 percent) of the children in Punjab are severely underweight and two-fifth of the children are underweight. The proportion of undernourished children increases rapidly with the child's age upto 12-23 months and shows a decrease thereafter. More than one-fifth (21 percent) of the children in the age group 12-23 months are severely underweight whereas more than two-fifth (47 percent) of the children in the same age group are underweight. By age 48-71 months the corresponding figures for severely underweight and underweight children stabilize at 9 and 34 percent, respectively.

Birth order of the child can also influence the nutritional status of the child. The second round of the RCH survey reveals that young children in families with six or more siblings are most likely to be underweight. Whereas 12 and 36 percent of children of first birth order are severely underweight and underweight respectively, the corresponding figures among children of birth order six or more are 21 and 60 percent, respectively. The observed sex differential both in severe underweight and underweight children is quite pronounced and interestingly, male children are more prone to be underweight in this regard. The extent of underweight children, both severe underweight and underweight, is higher in rural areas compared to that in urban areas. While around 12 and 36 percent children in urban areas are severely underweight and underweight, the corresponding figures for rural areas are 15 and 42 percent respectively.

Children's nutritional status is also expected to be influenced by mother's educational attainment. Children whose mothers are non-literate are about more than twice as likely to be severely underweight as compared to children whose mothers have ten or more years of schooling. Similarly, in the case of underweight, children of non-literate mothers are more under weight than mothers having some education. The percentage of underweight children is 49 among non-literate mothers while it is 32 among mothers with ten or more years of schooling.

The results of the RCH survey show that Muslims children tend to be more underweight than Christians Children. The percentage of underweight children among Muslims and Christians is respectively 42 and 37 percent. In all three categories, more than one-tenth of the children are severely underweight and around two-fifth of the children are underweight. Children from scheduled castes have the highest percentage of both severely underweight and underweight children (18 and 45 percent, respectively); whereas children belonging to the 'other caste' category are relatively better off than others.

Table 4.22.1 WEIGHT FOR AGE OF CHILDREN

Percentage of children (age 0-71 months) classified as undernourished by weight for age anthropometric matrix of nutritional status according to some selected background characteristics, Punjab, 2002-04

Background characteristic	Weight for age		Number of children
	Percentage Below – 3 SD	Percentage Below – 2 SD[1]	
Age of child (in months)			
0-5	4.8	18.7	468
6-11	18.0	41.8	699
12-23	21.4	47.0	1,177
24-47	16.7	46.4	2,613
48-71	8.9	34.4	2,942
Birth order			
1	11.7	35.5	2,478
2-3	14.1	40.7	3,495
4-5	17.4	48.2	926
6+	20.7	60.2	233
Mother's not interviewed	13.7	35.0	767
Sex of the child			
Male	15.3	42.3	4,432
Female	12.1	37.0	3,467
Residence			
Rural	14.7	41.7	5,408
Urban	12.2	36.3	2,491
Mother's education			
Non-literate	18.7	49.1	2,685
0-9@years	13.6	38.9	2,186
10 years & above	8.6	31.7	2,246
Mother's not interviewed	13.5	35.4	781
Religion			
Hindu	13.3	40.4	3,025
Muslim	7.3	41.9	95
Christian	13.0	37.3	186
Sikh	14.5	39.8	4,574
Caste/tribe#			
Scheduled caste	17.6	44.6	3,109
Scheduled tribe	13.6	33.1	107
Other backward class	13.4	43.1	1,541
Other	10.4	34.2	3,105
Standard of living index			
Low	21.0	50.7	1,121
Medium	15.9	45.6	3,375
High	9.5	30.9	3,403
Total	13.9	40.0	7,899

Note: This index is expressed in standard deviation units (SD) from the median of the International Reference Population. [1]Includes children who are below – 3 SD from the International Reference Population median. @ Literate mothers with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. Total includes 19 cases in other religions that were not shown separately

As expected, household's standard of living index (SLI) is strongly correlated with the malnourishment of children as reflected through the weight for age anthropometric measure. More than one-fifth (21 percent) of the children belonging to households of lower standard of living are severely underweight and more than half of the children in the same category are underweight. Whereas the corresponding figures for children belonging to high standard of living households are 10 and 31 percent, respectively.

Of the 17 districts in the state, in 2 districts the percentage of underweight children in less than 30, in 14 districts their percentage is between 30 and 50, and in 1 district their percentage is more than 50. Southern part of the state shows high prevalence of underweight children.

4.22.2 Anaemia among Children, Adolescent Girls, and Pregnant Women

In Punjab, haemoglobin level was measured for 72 percent of children under 6 years of age in sampled households. On the whole, the data on haemoglobin level are available for over 6 thousand children in the state. Table 4.22.2 shows the percent of children aged 0-71 months classified by the degree of anaemia and by selected background characteristics. Overall, 97 percent of these children have some level of anaemia, with 42 percent who are mildly anaemic, 50 percent who are moderately anaemic and 5 percent who are severely anaemic. Certain background characteristics of children show strong association with the level of anaemia. Some of them are: children aged 6-11 months (98 percent), children of lower birth order, more specifically, children of first birth order (98 percent), children who are severely underweight (98 percent), children from rural areas (98 percent), Sikh children (98 percent), children of schedule castes (99 percent). The household's standard of living is not revealing any conclusive relationship. But even in the socio-economic groups with the lowest level of anaemia, over four-fifth of children are anaemic. On the other hand, in no socio-economic group the prevalence of severe anaemia is more than forty percent.

Of the 17 districts in the state, in 4 districts their percentage is between 35 and 50, and in 13 districts their percentage is more than 50. Districts with high prevalence of anaemia among children are situated in most parts of the state.

Data on anaemia levels are available for about 6 thousand adolescent girls aged 10-19 years who constituted 71 percent of the sample. Table 4.22.3 shows anaemia levels for adolescent girls by selected background characteristics. In Punjab, 99 percent of adolescent girls have any anaemia. Seventeen percent of them are mildly anaemic, 48 percent are moderately anaemic and 34 percent are having severe anaemia. It has been found from the survey results that except mild anaemia, the percentage of girls in the remaining three categories diminishes marginally with the increase in age from 10-14 to 15-19. The incidence of any anaemia does not vary much by the marital status of the adolescents. Except mild anaemia, the occurrence of anaemia in the other categories is found to be higher in rural areas than in urban areas.

The prevalence of anaemia does not vary much with the educational attainment of girls. The prevalence of anaemia is higher among Muslim adolescent girls (100 percent). Adolescent girls from 'schedule castes' are more likely to suffer from any anaemia. It is interesting to note that adolescent girls from households with higher standard of living are slightly more likely to be anaemic.

Of the 17 districts in the state, in 4 districts their percentage is between 50 and 75, and in 13 districts their percentage is more than 75. Districts with high prevalence of anaemia among adolescent girls are situated mainly in western part of the state.

Haemoglobin levels were measured for Around 600 pregnant women aged 15-44 years who constituted 59 percent of the sample. Table 4.22.4 shows the anaemia status among pregnant women according some selected background characteristics. Around 98 percent of the pregnant women in Punjab are suffering from some anaemia. Among pregnant women, 41 percent have mild anaemia, 54 percent who have moderate anaemia and 3 percent have severe anaemia. Thus, although levels of any anaemia among pregnant women and adolescent girls are about the same, the prevalence of severe anaemia is substantially higher in adolescent girls (34 percent) than in pregnant women (3 percent). This may be because more stringent cut-off level for severe anaemia has been used in the case of adolescent girls (8 g/dl) than in the case of pregnant women (5 g/dl). Women residing in rural areas are slightly more likely (99 percent) to experience any anaemia compared to their urban counterparts (97 percent). The level of anemia does not show variation with educational levels and religion of the pregnant women. Pregnant women among scheduled castes are more prone to be anaemic (99 percent) among all the caste/tribe categories. It is interesting to note that except mild anaemia; pregnant women from households with medium standard of living are slightly more likely to be anaemic.

Table 4.22.2 ANAEMIA AMONG CHILDREN

Percentage of children (age 0-71 months) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Punjab, 2002-04

Background characteristic	Parentage of children with any anaemia	Percentage of children with			Number of children
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age of child (in months)					
0-5	97.5	40.2	51.7	5.7	374
6-11	97.8	31.7	60.0	6.0	578
12-23	97.7	30.9	59.0	7.8	973
24-47	97.6	40.7	51.6	5.2	2,190
48-71	97.0	50.4	43.4	3.2	2,602
Birth order					
1	97.8	44.7	48.8	4.2	2,097
2-3	97.4	41.3	50.8	5.2	2,986
4-5	96.6	38.8	51.6	6.2	781
6+	96.5	35.1	56.9	4.4	179
Mother's not interviewed	97.4	44.2	48.6	4.6	675
Sex of the child					
Male	97.3	41.8	50.3	5.1	3,782
Female	97.6	42.7	50.1	4.7	2,935
Weight for age of children					
Normal	97.2	45.4	47.9	3.8	4,075
Below – 2 SD[1]	97.7	37.3	53.9	6.6	2,643
Below – 3 SD	97.9	33.1	56.7	8.0	921
Residence					
Rural	97.6	40.8	51.8	5.0	4,658
Urban	96.9	45.5	46.6	4.7	2,061
Mother's education					
Non-literate	97.7	35.8	56.0	5.8	2,321
0-9@years	97.8	42.4	50.8	4.6	1,856
10 years & above	96.6	49.3	43.1	4.2	1,856
Mother's not interviewed	97.5	44.3	48.5	4.7	686
Religion					
Hindu	97.6	44.9	47.7	5.0	2,542
Muslim	83.5	39.5	43.3	0.7	83
Christian	91.3	47.2	39.3	4.7	165
Sikh	97.8	40.4	52.5	5.0	3,917
Caste/tribe#					
Scheduled caste	98.5	36.8	55.6	6.1	2,668
Scheduled tribe	95.4	44.5	48.2	2.6	76
Other backward class	97.2	42.2	50.6	4.4	1,306
Other	96.4	48.0	44.7	3.8	2,633
Standard of living index					
Low	97.1	34.1	55.9	7.1	989
Medium	97.8	40.2	52.0	5.6	2,859
High	97.1	47.1	46.5	3.5	2,870
Total	97.4	42.2	50.2	4.9	6,719

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. [1] Includes children who are below – 3 SD from the International Reference median. @ Literate mothers with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. Total includes 2 cases with missing information on sex of child, 12 cases of other religions that were not shown separately.

Table 4.22.3 ANAEMIA AMONG ADOLESCENT GIRLS

Percentage of adolescent girls[1] (age 10-19 years) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Punjab, 2002-04

Background characteristic	Parentage of adolescent with any anaemia	Percentage of adolescent with			Number of adolescent girls
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
10-14	99.2	16.3	48.9	34.0	3,391
15-19	98.7	17.1	47.7	33.8	2,919
Marital status					
Currently married	(100.0)	(17.9)	(46.4)	(35.7)	37
Currently not married	98.9	16.7	48.3	33.9	6,273
Residence					
Rural	99.1	15.9	48.6	34.6	4,210
Urban	98.7	18.2	47.8	32.7	2,100
Education					
Non-literate	98.9	16.4	44.6	37.9	563
0-9@years	99.0	16.0	48.3	34.7	4,495
10 years & above	98.8	19.4	50.1	29.4	1,252
Religion					
Hindu	99.0	15.9	48.3	34.8	2,360
Muslim	100.0	17.7	50.9	31.4	68
Christian	98.3	21.4	42.2	34.7	132
Sikh	98.9	16.9	48.5	33.5	3,721
Other	(100.0)	(25.0)	(53.6)	(21.4)	29
Caste/tribe#					
Scheduled caste	99.5	13.6	48.0	37.9	2,266
Scheduled tribe	98.5	11.4	48.7	38.5	91
Other backward class	98.8	15.9	49.0	34.0	1,231
Other	98.6	19.8	48.3	30.4	2,696
Standard of living index					
Low	99.4	15.3	47.7	36.5	570
Medium	99.2	13.7	50.0	35.5	2,801
High	98.6	19.8	46.9	31.9	2,939
Total	98.9	16.7	48.3	33.9	6,310

Note: Haemoglobin level between 10.0 - 11.9 g/dl is mild anaemia, 8.0 - 9.9 g/dl is moderate anaemia and below 8.0 g/dl is severe anaemia. [1] Includes currently married women age 15-19 years who were not pregnant at the time of survey. @ Literate adolescent with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. ( ) Based on less than 50 cases.

Table 4.22.4 ANAEMIA AMONG PREGNANT WOMEN

Percentage of pregnant women (age 15-44 years) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Punjab, 2002-04

Background characteristic	Parentage of pregnant women with any anaemia	Percentage of pregnant women with			Number of pregnant women
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
15-19	100.0	39.8	58.7	1.5	89
20-24	97.6	41.3	53.2	3.1	318
25-29	97.1	32.9	60.3	3.9	126
30-34	(100.0)	(50.0)	(50.0)	(0.0)	39
Residence					
Rural	98.6	37.7	57.5	3.4	401
Urban	96.8	47.7	47.3	1.8	182
Education					
Non-literate	98.4	33.6	60.6	4.3	164
0-9@years	97.1	43.0	52.0	2.1	189
10 years & above	98.6	44.1	51.9	2.6	231
Religion					
Hindu	98.7	49.8	46.0	3.0	232
Sikh	98.1	32.7	62.2	3.2	312
Other	(95.2)	(42.9)	(52.4)	(0.0)	38
Caste/tribe#					
Scheduled caste	99.3	37.8	59.9	1.5	248
Other backward class	95.6	34.4	54.9	6.3	106
Other	99.1	47.4	49.2	2.5	217
Standard of living index					
Low	96.5	45.8	47.8	2.9	73
Medium	100.0	37.7	58.6	3.7	228
High	96.9	42.0	52.6	2.2	281
Total	98.1	40.8	54.4	2.9	583

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. @ Literate women with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. ( ) Based on less number of cases. Total includes 10 & 1 cases in age group category 35-39 & 40-44 and 12 cases in scheduled tribe caste that were not shown separately.

4.23 RAJASTHAN

4.23.1 Weight for Age of Children:

In Rajasthan, weight was measured for 67 percent of children under 6 years of age in sampled households. On the whole, data on weight are available for over 20 thousand children in the state. Table 4.23.1 shows the percentage of children under 6 years of age classified as undernourished, as measured by weight for age index by some selected background characteristics. In the following discussion, children whose weight in SD unit (Z score) is less than –3 would be referred to as 'severely underweight' and those with weight in SD unit less than – 2 would be referred to simply as 'underweight'. More than one-fourth (28 percent) of the children in Rajasthan are severely underweight and nearly three-fifth (58 percent) of the children are underweight. The proportion of undernourished children increases rapidly with the child's age upto 6-11 months and shows a decrease thereafter. More than two-fifth (42 percent) of the children in the age group 12-23 months are severely underweight whereas more than three-fifth (71 percent) of the children in the same age group are underweight. By age 48-71 months the corresponding figures for severely and underweight children stabilize at 18 and 50 percent, respectively.

Birth order of the child can also influence the nutritional status of the child. The second round of the RCH survey revealed that young children in families with six or more siblings are most likely to be underweight. Whereas 26 and 57 percent of children of first birth order are severely underweight and underweight respectively, the corresponding figures among children of birth order six or more are 33 and 61 percent, respectively. The observed sex differential both in severe underweight and underweight children is marginal. The extent of underweight children, both severe underweight and underweight, is higher in rural areas compared to that in urban areas. While around 27 and 56 percent children in urban areas are severely underweight and underweight, the corresponding figures for rural areas are 29 and 59 percent respectively.

Children's nutritional status is also expected to be influenced by mother's educational attainment. Children whose mothers are non-literate are about twice as likely to be severely underweight as compared to children whose mothers have ten or more years of schooling. The contribution of non-literate mothers is substantially higher in the case of underweight children. The percentage of underweight children is 60 among non-literate mothers while it is 51 among mothers with ten or more years of schooling.

The results of the RCH survey show that Muslim children tend to be more underweight than Sikh children. The percentage of underweight children among Muslims and Sikhs is respectively 60 and 41 percent. Children from scheduled castes have the highest percentage of both severely underweight and underweight cases (31 and 62 percent, respectively), whereas children belonging to the 'other caste' category are relatively better off than others. As expected, household's standard of living index (SLI) is strongly correlated with the malnourishment of children as reflected through the weight for age anthropometric measure.

Table 4.23.1 WEIGHT FOR AGE OF CHILDREN

Percentage of children (age 0-71 months) classified as undernourished by weight for age anthropometric matrix of nutritional status according to some selected background characteristics, Rajasthan, 2002-04

Background characteristic	Weight for age		Number of children
	Percentage Below – 3 SD	Percentage Below – 2 SD[1]	
Age of child (in months)			
0-5	6.6	18.9	1,050
6-11	44.8	68.8	1,591
12-23	42.1	70.5	2,571
24-47	34.8	66.1	7,262
48-71	17.6	49.8	7,900
Birth order			
1	26.4	57.0	4,725
2-3	28.5	58.2	7,968
4-5	27.8	58.1	3,633
6+	32.9	61.2	1,862
Mother's not interviewed	29.5	57.3	2,186
Sex of the child			
Male	29.0	59.2	10,974
Female	27.7	56.7	9,400
Residence			
Rural	28.8	58.6	15,342
Urban	27.3	56.4	5,032
Mother's education			
Non-literate	29.6	59.7	12,601
0-9@years	26.8	56.4	3,903
10 years & above	21.5	50.4	1,612
Mother's not interviewed	29.5	57.2	2,258
Religion			
Hindu	28.3	58.0	17,960
Muslim	31.1	60.4	1,996
Sikh	19.0	49.1	199
Jain	22.8	51.1	171
Other	(26.7)	(55.6)	48
Caste/tribe#			
Scheduled caste	31.0	61.7	4,111
Scheduled tribe	27.5	58.0	2,758
Other backward class	28.4	57.9	8,611
Other	26.7	55.3	4,860
Standard of living index			
Low	30.8	60.9	9,848
Medium	27.0	57.0	6,039
High	25.1	53.4	4,482
Total	28.4	58.1	20,374

Note: This index is expressed in standard deviation units (SD) from the median of the International Reference Population. [1]Includes children who are below – 3 SD from the International Reference Population median. @ Literate mothers with no years of schooling are also included. ( ) Based on less than 50 unweighted cases. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. Total includes 14 cases in caste and 2 cases in standard of living that were not shown separately.

More than one-forth (31 percent) of the children belonging to households of lower standard of living are severely underweight and more than three-fifth of the children in the same category are underweight. Whereas the corresponding figures for children belonging to high standard of living households are 25 and 53 percent, respectively.

Of the 32 districts in the state, in 4 districts their percentage is between 30 and 50, and in 28 districts their percentage is more than 50. Most parts of the state shows high prevalence of underweight children.

4.23.2 Anaemia among Children, Adolescent Girls, and Pregnant Women

In Rajasthan, haemoglobin level was measured for 63 percent of children under 6 years of age in sampled households. On the whole, the data on haemoglobin level are available for over 18 thousand children in the state. Table 4.23.2 shows the percent of children aged 0-71 months classified by the degree of anaemia and by selected background characteristics. Overall, 97 percent of the children have some level of anaemia, with 54 percent who are mildly anaemic, 40 percent who are moderately anaemic and 2 percent who are severely anaemic. Certain background characteristics of children show strong association with the level of anaemia. Some of them are: children aged 12-23 months (97 percent), children of 2-3 birth order (97 percent), children who are severely underweight (97 percent), children from urban areas (97 percent), children of 0-9 years mothers (97 percent), children belonging to Sikh communities (98 percent), children of schedule tribe (97 percent) and children belonging to households characterized by medium standard of living (97 percent). But even in the socio-economic groups with the lowest level of anaemia, over four-fifth of children are anaemic. On the other hand, in no socio-economic group the prevalence of severe anaemia is more than three percent.

Of the 32 districts in the state, in 11 districts the percentage of children with severe or moderate anaemia is in less than 35, in 11 districts their percentage is between 35 and 50, and in 10 districts their percentage is more than 50. Districts with high prevalence of anaemia among children are situated mainly in eastern part of the state.

Data on anaemia levels are available for more than 12 thousand adolescent girls aged 10-19 years who constituted 59 percent of the sample. Table 4.23.3 shows anaemia level for adolescent girls by selected background characteristics. In Rajasthan, 99 percent of adolescent girls have any anaemia. Twenty percent of them are mildly anaemic, 57 percent are moderately anaemic and 22 percent are having severe anaemia. It has been found from the survey results that except any and severe anaemia, the percentage of girls in the remaining two categories of anaemia decreases marginally with the increase in age from 10-14 to 15-19 years. Except severe anaemia, the occurrence of anaemia in the other categories is found to be higher in rural areas than in urban areas. The prevalence of anaemia does not vary much with the educational attainment of girls. The level of anaemia is higher among adolescent girls (100 percent) of 'other religion'. It is also interesting to note that adolescent girls from households with medium standard of living are slightly more likely to be anaemic.

Of the 32 districts in the state, in 11 districts their percentage is between 50 and 75, and in 21 districts their percentage is more than 75. Districts with high prevalence of anaemia among adolescent girls are situated mainly in south and eastern parts of the state.

Haemoglobin levels were measured for more than 1,700 pregnant women aged 15-44 years who constituted 52 percent of the sample. Table 4.23.4 shows the anaemia status among pregnant women according some selected background characteristics. Around 96 percent of the pregnant women in Rajasthan are suffering from some anaemia. Among pregnant women, 49 percent have mild anaemia, 44 percent who have moderate anaemia and 3 percent who have severe anaemia. Thus, although levels of any anaemia among pregnant women and adolescent girls are about the same, the prevalence of severe anaemia is substantially higher in adolescent girls (22 percent) than in pregnant women (3 percent). This may be because more stringent cut-off level for severe anaemia has been used in the case of adolescent girls (8 g/dl) than in the case of pregnant women (5 g/dl). Table 4.23.4 clearly shows that percentage of pregnant women with any anaemia diminishes with the increase in the age of the pregnant women from 97 percent for the age group 15-19 to 91 percent in the age group 30-34. Except moderate anaemia, other categories of anaemia are found to be higher among women residing in rural areas compared to their urban counterpart. The prevalence of anaemia does not vary much with the level of educational attainment of the pregnant women. The level of anemia does not show variation with religion and caste of the pregnant women. It is interesting to note that pregnant women belonging to household with medium standard of living are more prone to be anaemic.

Table 4.23.2 ANAEMIA AMONG CHILDREN

Percentage of children (age 0-71 months) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Rajasthan, 2002-04

Background characteristic	Parentage of children with any anaemia	Percentage of children with			Number of children
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age of child (in months)					
0-5	96.6	50.4	44.5	1.7	825
6-11	97.1	43.0	51.9	2.3	1,333
12-23	97.4	39.4	53.9	4.1	2,362
24-47	96.7	50.9	42.8	3.0	6,613
48-71	96.1	65.0	29.6	1.5	7,319
Birth order					
1	96.3	54.1	39.4	2.7	4,316
2-3	96.8	53.8	40.9	2.1	7,232
4-5	96.5	55.7	38.3	2.6	3,225
6+	96.2	51.2	42.5	2.5	1,619
Mother's not interviewed	97.0	58.0	36.5	2.4	2,061
Sex of the child					
Male	96.6	55.1	39.0	2.5	9,923
Female	96.5	53.8	40.5	2.3	8,439
Weight for age of children					
Normal	96.2	58.9	35.4	1.9	8,293
Below - 2 SD[1]	96.8	50.8	43.2	2.8	10,160
Below - 3 SD	96.5	47.6	45.7	3.2	4,867
Residence					
Rural	96.5	54.3	39.9	2.2	13,895
Urban	96.9	54.7	39.2	3.0	4,558
Mother's education					
Non-literate	96.4	52.9	41.0	2.5	11,341
0-9@years	96.9	55.5	38.8	2.5	3,541
10 years & above	96.6	58.1	36.4	2.1	1,440
Mother's not interviewed	96.9	58.1	36.6	2.3	2,131
Religion					
Hindu	96.5	54.8	39.3	2.4	16,315
Muslim	96.9	49.2	44.6	3.1	1,759
Sikh	97.9	62.4	34.9	0.5	181
Jain	94.2	60.6	33.6	0.0	154
Other	(97.6)	(52.4)	(45.2)	(0.0)	44
Caste/tribe#					
Scheduled caste	96.5	53.6	40.3	2.6	3,663
Scheduled tribe	97.3	54.3	40.7	2.4	2,566
Other backward class	96.7	53.8	40.3	2.6	7,790
Other	96.1	56.2	37.7	2.1	4,410
Standard of living index					
Low	96.4	54.1	40.0	2.3	8,858
Medium	96.8	53.0	41.1	2.7	5,514
High	96.5	57.1	37.1	2.3	4,077
Total	96.6	54.4	39.7	2.4	18,453

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. [1] Includes children who are below - 3 SD from the International Reference median. @ Literate mothers with no years of schooling are also included. ( ) Based on less than 50 unweighted cases. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. Total includes 20 and 4 cases in Other and Don't Know in caste and 4 cases with missing information in standard of living index that were not shown separately.

Table 4.23.3 ANAEMIA AMONG ADOLESCENT GIRLS

Percentage of adolescent girls[1] (age 10-19 years) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Rajasthan, 2002-04

Background characteristic	Parentage of adolescent with any anaemia	Percentage of adolescent with			Number of adolescent girls
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
10-14	99.1	20.7	58.6	19.8	7,079
15-19	99.1	19.6	54.9	24.6	5,584
Marital status					
Currently married	99.0	18.1	55.3	25.6	1,752
Currently not married	99.1	20.6	57.3	21.3	10,911
Residence					
Rural	99.2	20.3	57.9	21.0	8,850
Urban	99.0	20.1	54.9	23.9	3,814
Education					
Non-literate	99.1	18.1	56.7	24.3	3,373
0-9@years	99.2	21.0	57.6	20.6	8,053
10 years & above	98.9	21.0	53.9	24.0	1,238
Religion					
Hindu	99.1	20.5	57.0	21.6	11,138
Muslim	99.4	16.1	56.1	27.2	1,131
Sikh	99.4	25.6	59.1	14.8	165
Jain	99.1	24.0	59.2	15.9	202
Other	(100.0)	(23.3)	(63.3)	(13.3)	26
Caste/tribe#					
Scheduled caste	99.0	19.6	56.7	22.7	2,517
Scheduled tribe	99.2	17.8	62.0	19.3	1,426
Other backward class	99.3	20.0	56.9	22.4	5,225
Other	99.0	22.1	55.3	21.6	3,481
Standard of living index					
Low	99.1	19.4	58.7	20.9	4,966
Medium	99.3	20.1	55.8	23.3	3,973
High	99.0	21.4	56.0	21.6	3,724
Total	99.1	20.2	57.0	21.9	12,663

Note: Haemoglobin level between 10.0 - 11.9 g/dl is mild anaemia, 8.0 - 9.9 g/dl is moderate anaemia and below 8.0 g/dl is severe anaemia. [1] Includes currently married women age 15-19 years who were not pregnant at the time of survey. @ Literate adolescent with no years of schooling are also included. ( ) Based on less than 50 unweighted cases. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. In religion 1 case of missing was not shown separately.

Table 4.23.4 ANAEMIA AMONG PREGNANT WOMEN

Percentage of pregnant women (age 15-44 years) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Rajasthan, 2002-04

Background characteristic	Parentage of pregnant women with any anaemia	Percentage of pregnant women with			Number of pregnant women
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
15-19	96.6	55.1	39.4	2.1	370
20-24	96.6	50.4	43.8	2.5	789
25-29	97.2	45.6	46.8	4.8	338
30-34	90.5	36.9	48.3	5.3	145
35-39	(96.2)	(45.3)	(43.4)	(7.5)	45
Residence					
Rural	96.7	49.4	43.6	3.8	1,317
Urban	94.4	47.7	45.1	1.6	389
Education					
Non-literate	95.8	48.5	43.6	3.6	1,117
0-9@years	97.6	46.2	48.3	3.1	427
10 years & above	95.3	59.3	34.7	1.3	161
Religion					
Hindu	96.3	49.6	43.8	2.9	1,477
Muslim	96.1	42.1	48.4	5.5	182
Other	(94.6)	(62.2)	(27.0)	(5.4)	47
Caste/tribe#					
Scheduled caste	96.6	52.3	40.6	3.6	317
Scheduled tribe	96.1	44.0	48.8	3.3	231
Other backward class	95.9	48.5	44.2	3.1	798
Other	96.6	50.3	43.0	3.3	361
Standard of living index					
Low	95.8	49.5	42.3	4.0	781
Medium	97.0	45.3	47.6	4.0	567
High	95.8	53.6	41.6	0.6	359
Total	96.2	49.0	43.9	3.3	1,707

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. @ Literate women with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. ( ) Based on less than 50 unweighted cases. Total includes 20 cases in age group category 40-44 that were not shown separately. One missing case in education was not shown separately.

4.24 SIKKIM

4.24.1 Weight for Age of Children:

In Sikkim, weight was measured for 83 percent of children under 6 years of age in sampled households. On the whole, data on weight are available for over 1 thousand children in the state. Table 4.24.1 shows the percentage of children under 6 years of age classified as undernourished, as measured by weight for age index by some selected background characteristics. In the following discussion, children whose weight in SD unit (Z score) is less than –3 would be referred to as 'severely underweight' and those with weight in SD unit less than – 2 would be referred to simply as 'underweight'. Less than one percent of the children in Sikkim are severely underweight and around one-tenth of the children are underweight. The proportion of undernourished children increases rapidly with the child's age upto 12-23 months and shows a decrease thereafter. Around 2 percent of the children in the age group 12-23 months are severely underweight whereas one-fifth (22 percent) of the children in the same age group are underweight. By age 48-71 months the corresponding figures for severely underweight and underweight children stabilize at 1 and less than 3 percent, respectively.

Birth order of the child can also influence the nutritional status of the child. The second round of the RCH survey reveals that young children in families with six or more siblings are most likely to be underweight. Whereas less than one and 11 percent of children of first birth order are severely underweight and underweight respectively, the corresponding figures among children of birth order six or more are 4 and 19 percent, respectively. The observed sex differential both in severe underweight and underweight children is quite pronounced. The extent of underweight children, both severe underweight and underweight, is higher in rural areas compared to that in urban areas. While 7 percent children in urban areas are underweight, the figures for rural areas are 1 and 10 percent for severe underweight and underweight respectively.

Children's nutritional status is also expected to be influenced by mother's educational attainment. Children whose mothers are non-literate or have ten or more years of education are about fourth times as likely to be severely underweight as compared to children whose mothers have zero to nine years of schooling. A different pattern is found in the case of underweight children. The percentage of underweight children is 14 among non-literate mothers while it is 9 among mothers with ten or more years of schooling.

The results of the RCH survey show that Buddhist children tend to be more underweight than Hindu children. The percentage of underweight children among Hindus and Buddhist is respectively 8 and 13 percent. Children from scheduled castes have the highest percentage of both severely underweight and underweight cases (2 and 24 percent, respectively), whereas children belonging to the 'other backward castes' category are relatively better off than others. As expected, household's standard of living index (SLI) is strongly correlated with the malnourishment of children as reflected through the weight for age anthropometric measure.

Table 4.24.1 WEIGHT FOR AGE OF CHILDREN

Percentage of children (age 0-71 months) classified as undernourished by weight for age anthropometric matrix of nutritional status according to some selected background characteristics, Sikkim, 2002-04

Background characteristic	Weight for age		Number of children
	Percentage Below – 3 SD	Percentage Below – 2 SD[1]	
Age of child (in months)			
0-5	0.0	3.1	78
6-11	0.0	16.5	55
12-23	2.3	21.6	151
24-47	1.5	17.3	362
48-71	0.1	2.9	654
Birth order			
1	0.5	10.8	426
2-3	1.2	8.9	532
4-5	0.4	13.8	121
6+	(3.4)	(19.0)	38
Mother's not interviewed	0.0	4.8	182
Sex of the child			
Male	1.1	11.8	729
Female	0.3	6.9	571
Residence			
Rural	0.9	10.1	1,140
Urban	0.0	6.5	160
Mother's education			
Non-literate	1.3	13.6	437
0-9@years	0.3	7.3	682
10 years & above	1.4	8.7	176
Religion			
Hindu	0.5	8.3	833
Christian	.0	9.6	62
Buddhist	1.6	12.5	363
Other	(2.4)	(14.3)	41
Caste/tribe#			
Scheduled caste	(2.0)	(23.5)	45
Scheduled tribe	1.4	14.9	254
Other backward class	0.3	9.6	500
Other	0.9	6.3	496
Standard of living index			
Low	1.0	11.9	605
Medium	0.4	7.5	527
High	0.9	8.4	167
Total	0.8	9.7	1,300

Note: This index is expressed in standard deviation units (SD) from the median of the International Reference Population. [1]Includes children who are below – 3 SD from the International Reference Population median. @ Literate mothers with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. Total includes 179 cases with missing information on birth order were not shown separately. Total includes 5 cases each on mothers not interviewed mother's education that were not shown separately. ( ) Based on less than 50 unweighted cases.

One percent of the children belonging to households of lower standard of living are severely underweight and more than one-tenth of the children in the same category are underweight. Whereas the corresponding figures for children belonging to high standard of living households are nearly 1 and 8 percent, respectively. The prevalence of undernourished children is lowest in households characterized by medium standard of living. Of the 2 districts in the state the percentage of underweight children in less than 30.

4.24.2 Anaemia among Children, Adolescent Girls, and Pregnant Women

In Sikkim, haemoglobin level was measured for 45 percent of children under 6 years of age in sampled households. On the whole, the data on haemoglobin level are available for over 6 hundred children in the state. Table 4.24.2 shows the percent of children aged 0-71 months classified by the degree of anaemia and by selected background characteristics. Overall, around 65 percent of the children have some level of anaemia, with 21 percent who are mildly anaemic, 39 percent who are moderately anaemic and 5 percent who are severely anaemic. Certain background characteristics of children show strong association with the level of anaemia. Some of them are: children aged 48-71 months (71 percent), children of higher birth order, more specifically, children of order four to five (71 percent), children who are underweight (70 percent), children from rural areas (66 percent), children of non-literate mothers and mothers having upto nine years of education (both 66 percent), Buddhist children (68 percent), children of schedule tribes (69 percent) and children belonging to households characterized by medium standard of living (69 percent). But even in the socio-economic groups with the lowest level of anaemia, over half of children are anaemic. On the other hand, in no socio-economic group the prevalence of severe anaemia is more than six percent. Of the 2 districts in the state, their percentage is between 35 and 50.

Data on anaemia levels are available for more than 4 hundred adolescent girls aged 10-19 years who constituted 35 percent of the sample. Table 4.24.3 shows anaemia level for adolescent girls by selected background characteristics. In Sikkim, 75 percent of adolescent girls have any anaemia. Thirty two percent of them are mildly anaemic, 21 percent are moderately anaemic and 21 percent are having severe anaemia. It has been found from the survey results that except moderate anaemia, the percentage of girls in the remaining three categories of anaemia diminishes marginally with the increase in age from 10-14 to 15-19 years. The incidence of any anaemia is 75 percent among adolescent girls who are currently unmarried. Except severe anaemia, the occurrence of anaemia in the other categories is found to be higher in rural areas than in urban areas. Except severe anaemia, the prevalence of other anaemia is strongly associated with the educational attainment of girls. The level of anaemia is higher among Hindu adolescent girls (77 percent). Adolescent girls from 'other backward class' are more likely to suffer from any anaemia. It is also interesting to note that adolescent girls from households with medium standard of living are slightly more likely to be anaemic. Of the 2 districts in the state, the percentage of adolescent girls with severe or moderate anaemia is in less than 50.

Haemoglobin levels were measured for 63 pregnant women aged 15-44 years who constituted 57 percent of the sample. Table 4.24.4 shows the anaemia status among pregnant women according some selected background characteristics. Around 46 percent of the pregnant women in Sikkim are suffering from some anaemia. Among pregnant women, 30 percent have mild anaemia, 12 percent who have moderate anaemia and 4 percent have severe anaemia. The prevalence of any anaemia and severe anaemia are substantially higher in adolescent girls (75 and 21 percent, respectively) than in pregnant women (46 and 4 percent, respectively). This may be because more stringent cut-off level for severe anaemia has been used in the case of adolescent girls (8 g/dl) than in the case of pregnant women (5 g/dl). The religious difference in levels of anaemia is found to be strong. Except moderate anaemia, Buddhist women are found to be more anaemic. Pregnant women among scheduled tribes are more prone to be anaemic (82 percent) among all the caste/tribe categories. Except moderate anaemia, standard of living is not negatively associated with the anaemia status of the pregnant women. Around 60 percent pregnant women belonging to households with medium standard of living are anaemic compared to 59 percent among women belonging to poor families.

Table 4.24.2 ANAEMIA AMONG CHILDREN

Percentage of children (age 0-71 months) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Sikkim, 2002-04

Background characteristic	Parentage of children with any anaemia	Percentage of children with			Number of children
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age of child (in months)					
0-5	56.6	13.0	35.4	8.2	55
12-23	58.4	14.1	37.5	6.8	89
24-47	61.4	24.0	33.8	3.6	236
48-71	71.2	22.3	44.8	4.2	296
Birth order					
1	63.2	18.1	41.3	3.8	267
2-3	62.1	19.6	36.1	6.5	306
4-5	71.0	24.4	45.9	0.7	56
Mother's not interviewed	(88.3)	(41.7)	(41.7)	(5.0)	48
Sex of the child					
Male	65.4	22.5	38.1	4.9	389
Female	64.1	19.0	41.0	4.1	308
Weight for age of children					
Normal	64.3	20.8	39.0	4.6	624
Below – 2 SD[1]	69.8	22.3	42.9	4.5	74
Residence					
Rural	66.2	20.9	41.0	4.3	638
Urban	50.6	21.9	21.9	6.9	60
Mother's education					
Non-literate	65.6	21.0	40.5	4.2	224
0-9@years	65.5	20.9	40.2	4.4	364
10 years & above	61.2	21.4	34.0	5.8	109
Religion					
Hindu	64.2	19.3	39.3	5.6	425
Buddhist	68.4	26.0	39.7	2.7	209
Other	58.4	15.7	39.3	3.5	65
Caste/tribe#					
Scheduled tribe	69.3	27.1	39.9	2.4	161
Other backward class	60.5	24.0	32.2	4.3	268
Other	66.5	13.7	46.3	6.5	246
Standard of living index					
Low	64.7	21.8	38.8	4.2	324
Medium	68.6	22.0	41.6	5.1	279
High	54.7	15.3	35.1	4.3	96
Total	64.9	21.0	39.4	4.6	698

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. [1] Includes children who are below – 3 SD from the International Reference median. @ Literate mothers with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. Total includes 48 and 1 case with missing information on birth order and sex of child respectively was not shown separately. Total includes 23 cases in age group 6-11, 22 cases in birth order 6+ respectively, 1 case in mother's education mother's not interviewed, 20 cases in scheduled caste that were not shown separately.

Table 4.24.3 ANAEMIA AMONG ADOLESCENT GIRLS

Percentage of adolescent girls[1] (age 10-19 years) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Sikkim, 2002-04

Background characteristic	Parentage of adolescent with any anaemia	Percentage of adolescent with			Number of adolescent girls
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
10-14	75.1	32.3	19.1	23.7	269
15-19	74.4	31.8	24.6	17.9	170
Marital status					
Currently not married	74.8	32.1	21.2	21.4	439
Residence					
Rural	76.3	32.7	22.2	21.3	358
Urban	68.4	29.6	16.9	21.9	82
Education					
0-9@years	73.8	31.6	20.3	21.9	367
10 years & above	79.5	34.4	23.8	21.2	51
Religion					
Hindu	77.0	31.1	24.0	22.0	263
Buddhist	71.2	34.6	17.3	19.4	125
Other	72.3	31.8	17.0	23.5	51
Caste/tribe#					
Scheduled tribe	73.0	32.7	19.1	21.3	98
Other backward class	77.1	37.0	19.6	20.4	151
Other	75.2	28.0	23.7	23.4	171
Standard of living index					
Low	73.1	30.3	22.1	20.7	156
Medium	77.7	34.5	22.4	20.8	203
High	70.8	29.7	16.7	24.5	80
Total	74.8	32.1	21.2	21.4	439

Note: Haemoglobin level between 10.0 - 11.9 g/dl is mild anaemia, 8.0 - 9.9 g/dl is moderate anaemia and below 8.0 g/dl is severe anaemia. [1] Includes currently married women age 15-19 years who were not pregnant at the time of survey. @ Literate adolescent with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. Total includes 22 illiterate and 14 of Scheduled Caste that were not shown separately.

Table 4.24.4 ANAEMIA AMONG PREGNANT WOMEN

Percentage of pregnant women (age 15-44 years) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Sikkim, 2002-04

Background characteristic	Parentage of pregnant women with any anaemia	Percentage of pregnant women with			Number of pregnant women
		Mild anaemia	Moderate anaemia	Severe anaemia	
Residence					
Rural	45.6	29.9	11.7	4.0	62
Education					
0-9@years	(51.4)	(28.6)	(20.0)	(2.9)	43
Religion					
Hindu	(47.8)	(26.1)	(21.7)	(0.0)	33
Buddhist	(64.9)	(40.5)	(18.9)	(5.4)	27
Standard of living index					
Low	(58.8)	(35.3)	(23.5)	(0.0)	33
Medium	(60.0)	(40.0)	(12.0)	(8.0)	25
Total	45.6	29.6	12.1	4.0	63

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. @ Literate women with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. Total includes 7,21,24,6,3 & 2 cases of category 15-19, 20-24, 25-29, 30-34, 35-39 & 40-44, 1 urban residential case, 9 & 11 cases for no-literate & 10+ educational category, 3 other religion cases, 16,23 & 24 cases of Scheduled Caste, Other Backward Class & Other Castes and 5 high SLI cases that were not shown separately. ( ) Based on less than 50 unweighted cases.

4.25 TAMIL NADU

4.25.1 Weight for Age of Children:

In Tamil Nadu, weight was measured for 86 percent of children under 6 years of age in sampled households. On the whole, data on weight are available for nearly 14 thousand children in the state. Table 4.25.1 shows the percentage of children under 6 years of age classified as undernourished, as measured by weight for age index by some selected background characteristics. In the following discussion, children whose weight in SD unit (Z score) is less than –3 would be referred to as 'severely underweight' and those with weight in SD unit less than – 2 would be referred to simply as 'underweight'. Almost one-sixth (17 percent) of the children in Tamil Nadu are severely underweight and nearly two-fifth (38 percent) of the children are underweight. The proportion of undernourished children increases rapidly with the child's age upto 12-23 months and shows a decrease thereafter. More than one- fourth (29 percent) of the children in the age group 12-23 months are severely underweight whereas nearly half (49 percent) of the children in the same age group are underweight. By age 48-71 months the corresponding figures for severely underweight and underweight children stabilize at 7 and 30 percent, respectively.

Birth order of the child can also influence the nutritional status of the child. The second round of the RCH survey reveals that young children in families with four to five siblings are most likely to be underweight. Whereas 17 and 37 percent of children of first birth order are severely underweight and underweight respectively, the corresponding figures among children of birth order 4-5 are 19 and 43 percent, respectively. The observed sex differential both in severe underweight and underweight children is quite pronounced and interestingly, male children are more prone to be underweight. The extent of underweight children is marginally higher in rural areas compared to that in urban areas and vice versa in case of severely underweight children. While around 17 and 38 percent children in urban areas are severely underweight and underweight, the corresponding figures for rural areas are 16 and 39 percent respectively.

Children's nutritional status is also expected to be influenced by mother's educational attainment. However, in Tamil Nadu, nutritional status of the children does not vary much by the educational attainment of the children's mother. In the case of underweight children, a marginal difference is observable. The percentage of underweight children is 40 among non-literate mothers while it is 37 among mothers with ten or more years of schooling.

The results of the RCH survey show that Christian children tend to be more underweight than Hindu children. The percentage of underweight children among Hindus and Christians is respectively 38 and 43 percent. Children from scheduled castes have the highest percentage of both severely underweight and underweight cases (18 and 42 percent, respectively), whereas children belonging to the 'other backward class' category are relatively better off than others.

Table 4.25.1 WEIGHT FOR AGE OF CHILDREN

Percentage of children (age 0-71 months) classified as undernourished by weight for age anthropometric matrix of nutritional status according to some selected background characteristics, Tamil Nadu, 2002-04

Background characteristic	Weight for age: Percentage Below – 3 SD	Weight for age: Percentage Below – 2 SD[1]	Number of children
Age of child (in months)			
0-5	7.4	20.9	875
6-11	27.4	45.5	1,201
12-23	28.9	48.5	2,323
24-47	18.3	43.0	4,900
48-71	7.4	29.5	4,583
Birth order			
1	17.0	37.2	5,508
2-3	16.0	38.6	6,544
4-5	18.5	43.2	818
6+	10.4	40.0	110
Mother's not interviewed	17.5	38.6	901
Sex of the child			
Male	17.7	40.9	6,987
Female	15.4	35.7	6,894
Residence			
Rural	16.3	38.9	7,759
Urban	16.9	37.6	6,122
Mother's education			
Non-literate	17.5	39.7	3,473
0-9@years	15.5	38.4	5,760
10 years & above	17.7	37.0	3,760
Mother's not interviewed	15.2	37.3	888
Religion			
Hindu	16.5	38.2	12,247
Muslim	16.7	36.2	930
Christian	18.1	42.5	681
Caste/tribe#			
Scheduled caste	18.2	41.5	3,918
Scheduled tribe	17.7	41.5	244
Other backward class	15.9	36.9	9,503
Other	16.0	38.2	199
Standard of living index			
Low	19.1	42.3	4,233
Medium	15.4	37.8	5,839
High	15.6	34.6	3,809
Total	16.6	38.3	13,881

Note: This index is expressed in standard deviation units (SD) from the median of the International Reference Population. [1]Includes children who are below – 3 SD from the International Reference Population median. @ Literate mothers with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. Total includes 22 children of other religions that were not shown separately. ( ) Based on less than 50 unweighted cases.

As expected, household's standard of living index (SLI) is strongly correlated with the malnourishment of children as reflected through the weight for age anthropometric measure. Nearly one-fifth (19 percent) of the children belonging to households of lower standard of living are severely underweight and more than two-fifth (43 percent) of the children in the same category are underweight. Whereas the corresponding figures for children belonging to high standard of living households are 16 and 35 percent, respectively.

Of the 30 districts in the state, in 5 districts the percentage of underweight children in less than 30, in 22 districts their percentage is between 30 and 50, and in 3 districts their percentage is more than 50. East and western parts of the state shows high prevalence of underweight children.

4.25.2 Anaemia among Children, Adolescent Girls, and Pregnant Women

In Tamil Nadu, haemoglobin level was measured for 72 percent of children under 6 years of age in sampled households. On the whole, the data on haemoglobin level are available for over 10 thousand children in the state. Table 4.25.2 shows the percent of children aged 0-71 months classified by the degree of anaemia and by selected background characteristics. Overall, 95 percent of the children have some level of anaemia, with 60 percent who are mildly anaemic, 31 percent who are moderately anaemic and 4 percent who are severely anaemic. Certain background characteristics of children show strong association with the level of anaemia. Some of them are: children aged 6-11 months (97 percent), children of higher birth order, more specifically, children of order six or more (97 percent), children who are severely underweight (97 percent), children from urban areas (95 percent), Hindu children (95 percent), children of Schedule tribe (95 percent) and children belonging to households characterized by low standard of living (95 percent). But even in the socio-economic groups with the lowest level of anaemia, more than half of children are anaemic. On the other hand, in no socio-economic group the prevalence of severe anaemia is more than three percent.

Of the 30 districts in the state, in 17 districts the percentage of children with severe or moderate anaemia is in less than 35 and in 13 districts their percentage is between 35 and 50. Districts with moderate prevalence of anaemia among children are situated mainly in central-east part of the state.

Data on anaemia levels are available for more than 8 thousand adolescent girls aged 10-19 years who constituted 72 percent of the sample. Table 4.25.3 shows anaemia levels for adolescent girls by selected background characteristics. In Tamil Nadu, 97 percent of adolescent girls have any anaemia. Twenty-nine percent of them are mildly anaemic, 50 percent are moderately anaemic and 18 percent are having severe anaemia. It has been found from the survey results that except severe anaemia the percentage of girls in all other categories of anaemia diminishes marginally with the increase in age from 10-14 to 15-19 years. The incidence of any anaemia is higher (97 percent) among adolescent girls who are currently unmarried compared to that among their married counterpart (95 percent).

Except mild and severe anaemia the occurrence of anaemia in all other categories is found to be higher in rural areas than in urban areas. The prevalence of any anaemia varies marginally with the educational attainment of girls. The level of anaemia is higher among Hindu adolescent girls (97 percent). Adolescent girls from schedule tribe are more likely to suffer from any anaemia. Adolescent girls from households with low standard of living are slightly more likely to be anaemic in case of any and severe anaemia and adolescent girls from households with high standard of living are slightly more likely to be anaemic in case of mild and moderate anaemia.

Of the 30 districts in the state, in 5 districts the percentage of adolescent girls with severe or moderate anaemia is in less than 50, in 15 districts their percentage is between 50 and 75, and in 10 districts their percentage is more than 75. Districts with high prevalence of anaemia among adolescent girls are situated mainly in eastern part of the state.

Haemoglobin levels were measured for more than 1,000 pregnant women aged 15-44 years who constituted 77 percent of the sample. Table 4.25.4 shows the anaemia status among pregnant women according some selected background characteristics. Around 94 percent of the pregnant women in Tamil Nadu are suffering from some anaemia. Among pregnant women, 64 percent have mild anaemia, 28 percent who have moderate anaemia and two percent who have severe anaemia. Thus, although levels of any anaemia among pregnant women and adolescent girls are about the same, the prevalence of severe anaemia is substantially higher in adolescent girls (18 percent) than in pregnant women (2 percent). This may be because more stringent cut-off level for severe anaemia has been used in the case of adolescent girls (8 g/dl) than in the case of pregnant women (5 g/dl). Table 4.25.4 clearly shows that percentage of pregnant women with any anaemia rises steadily with the increase in the age of the pregnant women from 94 percent for the age group 15-19 to 100 percent in the age group 30-34. Except any moderate anaemia, the occurrences of anaemia in other categories are found to be higher in urban areas compared to their rural counterparts. The prevalence of anaemia decreases with the level of educational attainment of the pregnant women. The level of anemia shows some variation with religion of the pregnant women. Caste difference in the level of anemia is not found to be strong. It is interesting note that the prevalence of any anaemia in households with medium standard of living.

Table 4.25.2 ANAEMIA AMONG CHILDREN

Percentage of children (age 0-71 months) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Tamil Nadu, 2002-04

Background characteristic	Parentage of children with any anaemia	Percentage of children with			Number of children
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age of child (in months)					
0-5	94.9	48.9	38.3	7.7	510
6-11	96.8	51.8	40.1	4.8	827
12-23	95.9	48.8	41.6	5.4	1,702
24-47	94.7	60.3	30.7	3.7	3,825
48-71	93.1	68.6	22.4	2.2	3,774
Birth order					
1	94.1	59.8	30.8	3.5	4,293
2-3	94.5	60.7	29.9	3.8	5,011
4-5	96.5	60.2	33.2	3.1	661
6+	97.1	53.6	34.6	8.9	79
Mother's not interviewed	94.5	60.1	30.9	3.5	595
Sex of the child					
Male	94.4	59.9	30.9	3.6	5,360
Female	94.6	60.5	30.3	3.8	5,269
Weight for age of children					
Normal	96.4	61.7	31.6	3.1	4,445
Below – 2 SD[1]	93.1	59.1	29.9	4.1	6,194
Below – 3 SD	96.5	62.4	30.9	3.2	6,047
Residence					
Rural	91.8	57.3	30.2	4.3	4,592
Urban	94.9	60.5	30.7	3.6	5,971
Mother's education					
Non-literate	94.0	59.8	30.4	3.8	4,668
0-9@years	95.2	59.6	31.5	4.1	2,772
10 years & above	95.0	59.0	32.4	3.5	4,420
Mother's not interviewed	93.0	62.6	26.8	3.6	2,833
Religion					
Hindu	94.9	60.3	30.8	3.8	614
Muslim	94.7	60.5	30.5	3.7	9,482
Christian	93.6	56.3	33.0	4.3	657
Caste/tribe#					
Scheduled caste	91.5	60.8	27.5	3.2	484
Scheduled tribe	94.9	58.9	31.8	4.3	3,072
Other backward class	94.8	63.5	28.9	2.5	194
Other	94.3	60.8	29.9	3.5	7,219
	95.5	56.3	37.3	1.9	142
Standard of living index					
Low	94.8	58.9	32.2	3.7	3,307
Medium	94.6	59.5	31.1	4.1	4,504
High	94.0	63.0	27.9	3.0	2,828
Total	94.5	60.2	30.6	3.7	10,639

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. [1] Includes children who are below – 3 SD from the International Reference median. @ Literate mothers with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. Total includes 17, 10 cases with missing information on birth order, sex of child respectively and 1 case in mother's education were not shown separately. Total includes 16 cases of other religions that were not shown separately.

Table 4.25.3 ANAEMIA AMONG ADOLESCENT GIRLS

Percentage of adolescent girls[1] (age 10-19 years) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Tamil Nadu, 2002-04

Background characteristic	Parentage of adolescent with any anaemia	Percentage of adolescent with			Number of adolescent girls
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
10-14	56.6	19.5	27.8	9.3	4,547
15-19	60.1	20.7	28.8	10.6	3,760
Marital status					
Currently married	63.0	26.9	28.4	7.6	203
Currently not married	58.0	19.9	28.3	9.9	8,102
Residence					
Rural	55.6	19.5	27.5	8.5	4,425
Urban	61.1	20.6	29.1	11.4	3,881
Education					
Non-literate	67.5	22.3	29.9	15.2	368
0-9@years	57.7	20.1	27.9	9.7	5,983
10 years & above	57.7	19.4	28.9	9.4	1,955
Religion					
Hindu	57.1	19.8	28.0	9.3	7,300
Muslim	62.6	17.7	28.5	16.5	518
Christian	69.1	25.2	32.3	11.6	470
Caste/tribe#					
Scheduled caste	56.0	19.7	26.7	9.5	2,402
Scheduled tribe	48.5	15.1	25.5	7.9	133
Other backward class	59.0	20.0	29.0	10.1	5,619
Other	69.9	32.4	27.8	9.7	152
Standard of living index					
Low	57.6	21.1	26.7	9.8	2,379
Medium	58.9	19.5	28.7	10.6	3,539
High	57.7	19.7	29.2	8.8	2,389
Total	58.2	20.0	28.3	9.9	8,307

Note: Haemoglobin level between 10.0 - 11.9 g/dl is mild anaemia, 8.0 - 9.9 g/dl is moderate anaemia and below 8.0 g/dl is severe anaemia. [1] Includes currently married women age 15-19 years who were not pregnant at the time of survey. @ Literate adolescent with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. In religion, 19 cases of other category are not shown separately.

Table 4.25.4 ANAEMIA AMONG PREGNANT WOMEN

Percentage of pregnant women (age 15-44 years) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics. Tamil Nadu, 2002-04

Background characteristic	Parentage of pregnant women with any anaemia	Percentage of pregnant women with			Number of pregnant women
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
15-19	93.7	60.7	30.4	2.5	188
20-24	93.4	65.5	26.8	1.1	575
25-29	94.1	66.0	26.2	1.9	294
30-34	100.0	52.9	41.1	6.0	69
Residence					
Rural	94.5	63.8	28.9	1.8	642
Urban	93.5	64.5	27.0	2.0	491
Education					
Non-literate	97.4	68.9	25.0	3.6	227
0-9@years	93.9	61.3	30.4	2.2	526
10 years & above	92.3	65.2	26.7	0.4	379
Religion					
Hindu	94.5	64.4	28.4	1.7	1,025
Muslim	89.2	59.5	25.8	3.9	65
Other	(94.9)	(59.0)	(30.8)	(5.1)	42
Caste/tribe#					
Scheduled caste	93.5	60.6	30.1	2.7	313
Other backward class	94.0	64.8	27.6	1.6	783
Standard of living index					
Low	96.7	62.1	32.0	2.6	275
Medium	92.0	62.9	27.3	1.9	544
High	95.4	68.1	26.0	1.3	313
Total	94.1	64.1	28.1	1.9	1,132

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. @ Literate women with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. ( ) Based on less than 50 unweighted cases. Total includes 5 & 1 cases in age group category 35-39 & 40-44 and 19 & 18 cases in scheduled tribe & other castes that were not shown separately.

4.26 TRIPURA

4.26.1 Weight for Age of Children:

In Tripura, weight was measured for 91 percent of children under 6 years of age in sampled households. On the whole, data on weight are available for nearly 6 hundred children in the state. Table 4.26.1 shows the percentage of children under 6 years of age classified as undernourished, as measured by weight for age index by some selected background characteristics. In the following discussion, children whose weights in SD unit (Z score) is less than –3 would be referred to as 'severely underweight' and those with weight in SD unit less than – 2 would be referred to simply as 'underweight'. Around six percent of the children in Tripura are severely underweight and more than one-fourth (30 percent) of the children are underweight. The proportion of undernourished children increases rapidly with the child's age upto 24-47 months and shows a decrease thereafter. Around 10 percent of the children in the age group 24-47 months are severely underweight whereas more than one-fourth (32 percent) of the children in the same age group are underweight. By age 48-71 months the corresponding figures for severely underweight and underweight children stabilize at 5 and 30 percent, respectively.

Birth order of the child can also influence the nutritional status of the child. The second round of the RCH survey reveals that young children in families with two-three siblings are most likely to be underweight. Whereas 5 and 31 percent of children of first birth order are severely underweight and underweight respectively, the corresponding figures among children of birth order second or third are 8 and 32 percent, respectively. The observed sex differential both in severe underweight and underweight children is marginal. The extent of underweight children, in case of severe underweight, is higher in rural areas compared to that in urban areas and in case of underweight, it is higher in urban areas compared to that in rural areas. While around 8 and 34 percent children in urban areas are severely underweight and underweight, the corresponding figures for rural areas are 6 and 29 percent respectively.

Children's nutritional status is also expected to be influenced by mother's educational attainment. Children whose mothers are non-literate are about more likely to be severely underweight as compared to children whose mothers have some education. A similar pattern is also found in the case of underweight children. The percentage of underweight children is 35 among non-literate mothers while it is 29 among mothers with ten or more years of schooling.

The results of the RCH survey show that children belonging to other religious group tend to be more underweight than Hindu children. The percentage of underweight children among other religion and Hindus is respectively 40 and 29 percent. Children from scheduled tribes have the highest percentage of both severely underweight and underweight cases (7 and 41 percent, respectively), whereas children belonging to the other category are relatively better off than 'other backward class'.

Table 4.26.1 WEIGHT FOR AGE OF CHILDREN

Percentage of children (age 0-71 months) classified as undernourished by weight for age anthropometric matrix of nutritional status according to some selected background characteristics, Tripura, 2002-04

Background characteristic	Weight for age		Number of children
	Percentage Below – 3 SD	Percentage Below – 2 SD[1]	
Age of child (in months)			
12-23	0.0	27.8	51
24-47	9.9	32.3	167
48-71	4.9	29.5	289
Birth order			
1	4.8	31.2	270
2-3	7.7	31.6	200
Sex of the child			
Male	6.1	41.4	271
Female	5.7	19.0	268
Residence			
Rural	6.0	29.1	414
Urban	5.7	34.0	125
Mother's education			
Non-literate	7.4	34.5	112
0-9@years	5.2	29.3	295
10 years & above	6.3	28.8	132
Religion			
Hindu	5.2	29.4	498
Other	(14.3)	(40.2)	41
Caste/tribe#			
Scheduled caste	2.7	23.9	129
Scheduled tribe	6.6	41.4	125
Other backward class	7.6	29.1	116
Other	6.9	27.9	163
Standard of living index			
Low	6.1	32.3	232
Medium	4.9	30.1	217
High	7.8	25.4	91
Total	5.9	30.2	539

Note: This index is expressed in standard deviation units (SD) from the median of the International Reference Population. [1]Includes children who are below – 3 SD from the International Reference Population median. @ Literate mothers with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. Total includes 52 cases of mother not interview in birth order were not shown separately. Total includes 14 and 18 children of 0-5 and 6-11 age respectively, 16 and 2 children of 4-5 and 6+ birth order that were not shown separately, ( ) Based on less than 50 unweighted cases.

As expected, except severe anaemia, household's standard of living index (SLI) is strongly correlated with the malnourishment of children as reflected through the weight for age anthropometric measure. Nearly one-third (32 percent) of the children belonging to households of lower standard of living are underweight whereas the corresponding figure for children belonging to high standard of living households is 25 percent. It is interesting to note that children belonging to higher standard of living are more prone (8 percent) to be severely underweight.

Of the 2 districts in the state, in one district the percentage of underweight children in less than 30, in one district their percentage is between 30 and 50. Western part of the state shows high prevalence of underweight children.

4.26.2 Anaemia among Children, Adolescent Girls, and Pregnant Women

In Tripura, haemoglobin level was measured for 61 percent of children under 6 years of age in sampled households. On the whole, the data on haemoglobin level are available for over 3 hundred children in the state. Table 4.26.2 shows the percent of children aged 0-71 months classified by the degree of anaemia and by selected background characteristics. Overall, 74 percent of the children have some level of anaemia, with 30 percent who are mildly anaemic, 43 percent who are moderately anaemic and 1 percent who are severely anaemic. Certain background characteristics of children show strong association with the level of anaemia. Some of them are: children aged 12-23 months (85 percent), children of higher birth order, more specifically, children of order two or three (77 percent), male children (75 percent), children who are underweight (76 percent), children from rural areas (77 percent), children of non-literate mothers (78 percent), children belonging to other religious groups (81 percent), children of other backward classes (81 percent) and children belonging to households characterized by low standard of living (78 percent). But even in the socio-economic groups with the lowest level of anaemia, over three-fifth of children are anaemic. On the other hand, in no socio-economic group the prevalence of severe anaemia is more than four percent.

Of the 2 districts in the state, in one district the percentage of children with severe or moderate anaemia is between 35 and 50 and in one district their percentage is more than 50. Districts with high prevalence of anaemia among children are situated mainly in eastern part of the state.

Data on anaemia levels are available for about 4 hundred adolescent girls aged 10-19 years who constituted 57 percent of the sample. Table 4.26.3 shows anaemia levels for adolescent girls by selected background characteristics. In Tripura, 76 percent of adolescent girls have any anaemia. Twenty-two percent of them are mildly anaemic, 37 percent are moderately anaemic and 19 percent are having severe anaemia. It has been found from the survey results that the percentage of girls in all four categories of anaemia increases with the increase in age from 10-14 to 15-19 years. Except severe and mild anaemia, the occurrence of anaemia in the other categories is found to be higher in rural areas than in urban areas. Except severe and moderate anaemia, the prevalence of anaemia is found to be higher among girls with education 10 years or above. The level of any anaemia is higher among Hindu adolescent girls (78 percent). Adolescent girls from 'schedule castes' are more likely to suffer from any anaemia. It is interesting to note that adolescent girls from households with medium standard of living are slightly more likely to be anaemic.

Of the 2 districts in the state, the percentage of adolescent girls with severe or moderate anaemia is between 50 and 75.

Haemoglobin levels were measured for more than 100 pregnant women aged 15-44 years who constituted 97 percent of the sample. Table 4.26.4 shows the anaemia status among pregnant women according some selected background characteristics. Around 63 percent of the pregnant women in Tripura are suffering from some anaemia. Among pregnant women, 33 percent women have mild anaemia, 29 percent who have moderate anaemia and less than one percent who have severe anaemia. Thus, although levels of any anaemia among pregnant women and adolescent girls are about the same, the prevalence of severe anaemia is substantially higher in adolescent girls (19 percent) than in pregnant women (1 percent). This may be because more stringent cut-off level for severe anaemia has been used in the case of adolescent girls (8 g/dl) than in the case of pregnant women (5 g/dl). Table 4.26.4 clearly shows that Women from rural areas are more likely (66 percent) to experience any anaemia compared to their urban counterparts (52 percent). Except mild anaemia, the prevalence of anaemia increases substantially with the level of educational attainment of the pregnant women. Pregnant women among scheduled tribes are more prone to be anaemic (71 percent) among all the caste/tribe categories. The differences in standard of living in levels of anaemia are not found to be strong.

Table 4.26.2 ANAEMIA AMONG CHILDREN

Percentage of children (age 0-71 months) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Tripura, 2002-04

Background characteristic	Parentage of children with any anaemia	Percentage of children with			Number of children
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age of child (in months)					
12-23	(84.6)	(26.9)	(57.7)	(0.0)	26
24-47	73.0	34.8	35.7	2.5	115
48-71	74.2	27.5	45.7	1.0	205
Birth order					
1	72.1	27.7	44.1	0.4	202
2-3	77.2	31.7	42.3	3.2	138
Sex of the child					
Male	75.1	26.6	46.1	2.5	177
Female	73.4	33.6	39.4	0.4	184
Weight for age of children					
Normal	73.5	31.3	40.2	2.0	258
Below – 2 SD[1]	76.3	27.4	48.9	0.0	102
Residence					
Rural	77.1	29.0	46.7	1.4	280
Urban	64.4	34.2	28.8	1.4	81
Mother's education					
Non-literate	77.5	38.8	37.7	1.0	75
0-9@years	75.7	27.1	47.9	0.7	198
10 years & above	68.2	29.7	35.2	3.3	88
Religion					
Hindu	74.0	28.5	44.2	1.3	336
Other	(80.8)	(50.0)	(26.9)	(3.8)	25
Caste/tribe#					
Scheduled caste	72.2	36.8	33.8	1.7	87
Scheduled tribe	79.3	28.1	50.2	1.0	74
Other backward class	81.3	36.2	42.8	2.3	80
Other	66.6	21.5	44.2	1.0	115
Standard of living index					
Low	77.6	34.9	42.3	0.5	151
Medium	75.0	29.0	43.7	2.2	147
High	64.5	21.5	41.2	1.8	63
Total	74.3	30.2	42.7	1.4	361

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. [1] Includes children who are below – 3 SD from the International Reference median. @ Literate mothers with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. ( ) based on less than 50 unweighted cases. Total includes 7 cases with missing information on birth order were not shown separately. Total includes 4 cases and 11 cases in age group 0-5 and 6 -11 respectively, 12 cases and 2 cases in birth order 4-5 and 6+ respectively and 7 cases of mother not interview, 23 cases in weight for age of children below – 3 SD were not shown separately.

Table 4.26.3 ANAEMIA AMONG ADOLESCENT GIRLS

Percentage of adolescent girls[1] (age 10-19 years) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Tripura, 2002-04

Background characteristic	Parentage of adolescent with any anaemia	Percentage of adolescent with			Number of adolescent girls
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
10-14	74.1	20.8	36.4	17.0	200
15-19	80.9	22.7	36.6	21.6	199
Marital status					
Currently not married	77.7	21.7	36.5	19.3	399
Residence					
Rural	77.9	20.0	39.8	18.0	285
Urban	76.5	25.9	28.2	22.4	114
Education					
Non-literate	(74.6)	(27.0)	(39.7)	(7.9)	44
0-9@years	75.9	19.4	37.9	18.6	293
10 years & above	84.9	30.2	28.0	26.6	62
Religion					
Hindu	77.5	21.1	36.4	20.1	374
Other	(75.0)	(29.2)	(37.5)	(8.3)	25
Caste/tribe#					
Scheduled caste	79.5	16.8	43.5	19.3	72
Scheduled tribe	76.0	25.7	34.0	16.2	80
Other backward class	76.9	31.7	33.2	12.0	93
Other	78.7	16.5	36.9	25.2	149
Standard of living index					
Low	77.3	20.9	37.8	18.6	154
Medium	78.6	21.6	40.5	16.4	163
High	75.5	23.4	26.1	26.1	82
Total	77.5	21.7	36.5	19.3	399

Note: Haemoglobin level between 10.0 - 11.9 g/dl is mild anaemia, 8.0 - 9.9 g/dl is moderate anaemia and below 8.0 g/dl is severe anaemia. [1] Includes currently married women age 15-19 years who were not pregnant at the time of survey. @ Literate adolescent with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. ( ) Based on less than 50 unweighted cases.

Table 4.26.4 ANAEMIA AMONG PREGNANT WOMEN

Percentage of pregnant women (age 15-44 years) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Tripura, 2002-04

Background characteristic	Parentage of pregnant women with any anaemia	Percentage of pregnant women with			Number of pregnant women
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
25-29	(57.1)	(31.4)	(25.7)	(0.0)	36
Residence					
Rural	66.3	36.2	28.9	1.2	84
Urban	(52.4)	(23.8)	(28.6)	(0.0)	26
Education					
0-9@years	(54.2)	(37.5)	(16.7)	(0.0)	46
10 years & above	(73.7)	(36.8)	(34.2)	(2.6)	41
Religion					
Hindu	61.5	32.0	28.5	0.9	102
Caste/tribe#					
Scheduled caste	(55.9)	(32.4)	(17.6)	(5.9)	29
Scheduled Tribe	(70.8)	(33.3)	(37.5)	(0.0)	25
Other	(56.3)	(31.3)	(25.0)	(0.0)	35
Standard of living index					
Low	(60.0)	(37.5)	(22.5)	(0.0)	39
Medium	(59.6)	(32.7)	(23.1)	(3.8)	50
Total	62.9	33.2	28.9	0.9	110

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. @ Literate women with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases ( ) Based on less number of cases. Total includes 11,19, 21, 14 & 8 cases in age group category 15-19, 20-24, 30-34, 35-39 & 40-44, 22 cases in non-literate category, 8 cases in other religion 19 cases in Caste-OBC and 21 cases in High SLI that were not shown separately.

4.27 UTTAR PRADESH

4.27.1 Weight for Age of Children:

In Uttar Pradesh, weight was measured for 65 percent of children under 6 years of age in sampled households. On the whole, data on weight are available for nearly 51 thousand children in the state. Table 4.27.1 shows the percentage of children under 6 years of age classified as undernourished, as measured by weight for age index by some selected background characteristics. In the following discussion, children whose weight in SD unit (Z score) is less than –3 would be referred to as 'severely underweight' and those with weight in SD unit less than –2 would be referred to simply as 'underweight'. More than one-fifth (23 percent) of the children in Uttar Pradesh are severely underweight and more than half (55 percent) of the children are underweight. The proportion of undernourished children increases rapidly with the child's age upto 12-23 months and shows a decrease thereafter. More than one-fourth (31 percent) of the children in this age group 12-23 months are severely underweight whereas more than three-fifth (62 percent) of the children in the same age group are underweight. By age 48-71 months the corresponding figures for severely underweight and underweight children stabilize at 16 and 53 percent, respectively.

Birth order of the child can also influence the nutritional status of the child. The second round of the RCH survey reveals that young children in families with six or more siblings are most likely to be underweight. Whereas 21 and 54 percent of children of first birth order are severely underweight and underweight respectively, the corresponding figures among children of birth order six or more are 26 and 59 percent, respectively. The observed sex differential both in severe underweight and underweight children is marginal. The extent of underweight children, both severe and moderate, is higher in rural areas compared to that in urban areas. While around 22 and 53 percent children in urban areas are severely underweight and underweight, the corresponding figures for rural areas are 24 and 56 percent respectively.

Children's nutritional status is also expected to be influenced by mother's educational attainment. Children whose mothers are non-literate are more likely to be severely underweight as compared to children whose mothers have ten or more years of schooling. A similar pattern is also found in the case of underweight children. The percentage of underweight children is 59 among non-literate mothers while it is 43 among mothers with ten or more years of schooling.

The results of the RCH survey show that Christian children tend to be more underweight than Hindu children. The percentage of underweight children among Hindus and Christians is respectively 55 and 59 percent. Children from scheduled tribes have the highest percentage of both severely underweight and underweight cases (28 and 61 percent, respectively), whereas children belonging to the 'other caste' category are relatively better off than others. As expected, household's standard of living index (SLI) is negatively correlated with the malnourishment of children as reflected through the weight for age anthropometric measure.

Table 4.27.1 WEIGHT FOR AGE OF CHILDREN

Percentage of children (age 0-71 months) classified as undernourished by weight for age anthropometric matrix of nutritional status according to some selected background characteristics, Uttar Pradesh, 2002-04

Background characteristic	Weight for age		Number of children
	Percentage Below – 3 SD	Percentage Below – 2 SD[1]	
Age of child (in months)			
0-5	10.1	23.4	3,225
6-11	27.0	53.2	4,582
12-23	31.0	62.4	6,988
24-47	29.5	61.9	16,537
48-71	16.0	52.9	19,461
Birth order			
1	20.5	53.9	9,959
2-3	21.8	54.6	17,974
4-5	24.6	56.5	11,714
6+	25.6	58.6	8,214
Mother's not interviewed	26.1	53.7	2,931
Sex of the child			
Male	23.4	56.4	26,373
Female	22.7	54.1	24,420
Residence			
Rural	23.5	56.0	3,7764
Urban	21.8	53.2	13,030
Mother's education			
Non-literate	25.2	59.0	31,160
0-9@years	20.9	52.5	9,040
10 years & above	16.0	42.9	4,934
Mother's not interviewed	21.0	50.0	5,660
Religion			
Hindu	22.8	55.0	41,068
Muslim	24.3	56.9	9,544
Christian	16.4	58.8	60
Sikh	10.2	34.0	71
Other	25.8	44.1	50
Caste/tribe#			
Scheduled caste	26.0	59.0	12,325
Scheduled tribe	27.6	61.1	508
Other backward class	23.2	56.1	25,828
Other	19.6	49.7	11,549
Standard of living index			
Low	24.5	58.4	29,527
Medium	22.7	54.1	13,816
High	18.0	45.2	7,451
Total	23.1	55.3	50,794

Note: This index is expressed in standard deviation units (SD) from the median of the International Reference Population. [1]Includes children who are below – 3 SD from the International Reference Population median. @ Literate mothers with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. Total includes 159 cases with missing information on birth order and 9 cases in mother's education that were not shown separately.

About one-fourth (25 percent) of the children belonging to households of lower standard of living are severely underweight and more than half of the children in the same category are underweight. Whereas the corresponding figures for children belonging to high standard of living households are 18 and 45 percent, respectively.

Of the 70 districts in the state, in 18 districts their percentage is between 30 and 50, and in 52 districts their percentage is more than 50. Most parts of the state shows high prevalence of underweight children.

4.27.2 Anaemia among Children, Adolescent Girls, and Pregnant Women

In Uttar Pradesh, haemoglobin level was measured for 54 percent of children under 6 years of age in sampled households. On the whole, the data on haemoglobin level are available for over 40 thousand children in the state. Table 4.27.2 shows the percent of children aged 0-71 months classified by the degree of anaemia and by selected background characteristics. Overall, 96 percent of the children have some level of anaemia, with 46 percent who are mildly anaemic, 48 percent who are moderately anaemic and 3 percent who are severely anaemic. Certain background characteristics of children show strong association with the level of anaemia. Some of them are: children aged 6-11 months (98 percent), children of higher birth order, more specifically, children of order six or more (97 percent), children who are severely underweight and underweight (both 97 percent), children from urban areas (96 percent), children of mothers having zero to nine years of education (97 percent), Hindu children (96 percent), children of schedule castes (97 percent) and children belonging to households characterized by low standard of living (97 percent). But even in the socio-economic groups with the lowest level of anaemia, over four-fifth of children are anaemic. On the other hand, in no socio-economic group the prevalence of severe anaemia is more than four percent.

Of the 70 districts in the state, in 10 districts the percentage of children with severe or moderate anaemia is in less than 35, in 29 districts their percentage is between 35 and 50, and in 31 districts their percentage is more than 50. Districts with high prevalence of anaemia among children are situated mainly in south, north-west and eastern parts of the state.

Data on anaemia levels are available for about 27 thousand adolescent girls aged 10-19 years who constituted 54 percent of the sample. Table 4.27.3 shows anaemia levels for adolescent girls by selected background characteristics. In Uttar Pradesh, 98 percent of adolescent girls have any anaemia. Twenty two percent of them are mildly anaemic, 47 percent are moderately anaemic and 29 percent are having severe anaemia. It has been found from the survey results that except severe anaemia, the percentage of girls in the remaining three categories of anaemia diminishes marginally with the increase in age from 10-14 to 15-19 years. The incidence of any anaemia is marginally higher among adolescent girls who are currently married compared to that among their unmarried counterpart. Except severe anaemia, the occurrence of anaemia in the other categories is found to be marginally higher in urban areas than in rural areas.

The prevalence of anaemia does not vary much with the educational attainment of girls. The level of anaemia is higher among Hindu and Muslim adolescent girls (98 percent). Differential in caste and household's standard of living in levels of anaemia are not found to be strong.

Of the 70 districts in the state, in 5 districts the percentage of adolescent girls with severe or moderate anaemia is in less than 50, in 29 districts their percentage is between 50 and 75, and in 36 districts their percentage is more than 75. Districts with high prevalence of anaemia among adolescent girls are situated mainly in north-west, east and southern parts of the state.

Haemoglobin levels were measured for more than 3,000 pregnant women aged 15-44 years who constituted 52 percent of the sample. Table 4.27.4 shows the anaemia among pregnant women according some selected background characteristics. Around 96 percent of the pregnant women in Uttar Pradesh are suffering from some anaemia, whatever may be the degree. Among pregnant women, 46 percent have mild anaemia and moderate anaemia and 3 percent have severe anaemia. Thus, although levels of any anaemia among pregnant women and adolescent girls are about the same, the prevalence of severe anaemia is substantially higher in adolescent girls (29 percent) than in pregnant women (3 percent). This may be because more stringent cut-off level for severe anaemia has been used in the case of adolescent girls (8 g/dl) than in the case of pregnant women (5 g/dl). Table 4.27.4 clearly shows that except pregnant women of age group 30-34 and 40-44, percentage of pregnant women with any anaemia decreases marginally with the increase in the age of the pregnant women from 96 percent for the age group 15-19 to 95 percent in the age group 35-39. The level of any anaemia does not vary much with the place of residence. The prevalence of anaemia increases marginally with the level of educational attainment of the pregnant women. The level of anemia does not show variation with religion of the pregnant women. Pregnant women among other castes are more prone to be anaemic (97 percent) among all the caste/tribe categories. As expected, standard of living is not negatively associated with the anaemia status of the pregnant women. Around 95 percent pregnant women belonging to poor families are anaemic compared to 97 percent among women belonging to households with medium standard of living.

Table 4.27.2 ANAEMIA AMONG CHILDREN

Percentage of children (age 0-71 months) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Uttar Pradesh, 2002-04

Background characteristic	Parentage of children with any anaemia	Percentage of children with			Number of children
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age of child (in months)					
0-5	95.1	39.5	51.6	4.0	2,236
6-11	97.6	37.0	56.5	4.0	3,561
12-23	97.3	32.6	60.4	4.2	5,723
24-47	96.4	43.3	49.9	3.2	13,392
48-71	95.4	56.0	37.3	2.1	15,937
Birth order					
1	96.3	48.1	45.2	2.9	7,959
2-3	96.4	46.9	46.6	2.9	14,470
4-5	96.5	45.2	48.2	3.1	9,470
6+	96.6	43.3	50.0	3.2	6,554
Mother's not interviewed	92.2	44.0	44.8	3.4	2,394
Sex of the child					
Male	96.1	47.3	45.7	3.1	21,255
Female	96.2	44.6	48.7	2.9	19,577
Weight for age of children					
Normal	95.3	50.3	42.6	2.3	18,215
Below – 2 SD[1]	96.9	42.5	50.7	3.6	22,633
Below – 3 SD	96.8	37.9	54.0	4.9	9,726
Residence					
Rural	96.1	45.6	47.5	2.9	30,830
Urban	96.4	47.1	45.9	3.3	10,018
Mother's education					
Non-literate	96.3	44.5	48.6	3.2	24,943
0-9@years	96.7	47.2	46.7	2.8	7,454
10 years & above	95.3	50.1	42.4	2.8	3,934
Mother's not interviewed	95.2	48.5	44.1	2.7	4,517
Religion					
Hindu	96.2	46.3	47.0	2.9	33,509
Muslim	96.0	44.5	47.9	3.6	7,203
Other	93.3	53.5	36.3	3.4	136
Caste/tribe#					
Scheduled caste	97.1	44.4	49.6	3.0	9,992
Scheduled tribe	96.2	41.4	51.1	3.7	379
Other backward class	96.3	45.9	47.2	3.1	20,719
Other	95.4	48.3	44.3	2.8	9,302
Standard of living index					
Low	96.5	44.8	48.7	3.0	23,793
Medium	95.9	46.0	46.7	3.2	11,145
High	95.3	50.7	41.8	2.8	5,910
Total	96.2	46.0	47.1	3.0	40,848

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. [1] Includes children who are below – 3 SD from the International Reference median. @ Literate mothers with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. Total includes 16 cases with missing information on birth order that were not shown separately.

Table 4.27.3 ANAEMIA AMONG ADOLESCENT GIRLS

Percentage of adolescent girls[1] (age 10-19 years) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Uttar Pradesh, 2002-04

Background characteristic	Parentage of adolescent with any anaemia	Percentage of adolescent with			Number of adolescent girls
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
10-14	97.9	22.9	47.4	27.6	16,390
15-19	97.7	21.3	45.8	30.7	10,420
Marital status					
Currently married	98.4	14.9	46.3	37.2	1,069
Currently not married	97.8	22.6	46.8	28.4	25,736
Residence					
Rural	97.7	21.3	46.7	29.7	17,915
Urban	98.0	24.2	46.9	26.9	8,896
Education					
Non-literate	97.5	19.2	45.4	32.9	6,352
0-9@years	98.0	23.1	47.3	27.6	17,662
10 years & above	97.6	23.9	46.5	27.1	2,797
Religion					
Hindu	97.9	22.6	47.1	28.2	21,651
Muslim	97.7	20.9	45.5	31.3	5,054
Sikh	88.0	36.8	38.6	12.5	51
Other	97.6	21.5	35.5	40.7	55
Caste/tribe#					
Scheduled caste	98.1	21.8	46.9	29.4	5,572
Scheduled tribe	98.1	22.1	39.8	36.2	206
Other backward class	97.8	20.7	47.2	29.9	13,343
Other	97.8	25.6	45.9	26.2	7,380
Standard of living index					
Low	97.8	21.0	46.9	29.9	12,996
Medium	97.7	22.1	46.2	29.4	8,121
High	97.9	25.4	47.1	25.4	5,694
Total	97.8	22.3	46.7	28.8	26,811

Note: Haemoglobin level between 10.0 - 11.9 g/dl is mild anaemia, 8.0 - 9.9 g/dl is moderate anaemia and below 8.0 g/dl is severe anaemia. [1] Includes currently married women age 15-19 years who were not pregnant at the time of survey. @ Literate adolescent with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases.

Table 4.27.4 ANAEMIA AMONG PREGNANT WOMEN

Percentage of pregnant women (age 15-44 years) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Uttar Pradesh, 2002-04

Background characteristic	Parentage of pregnant women with any anaemia	Percentage of pregnant women with			Number of pregnant women
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
15-19	95.7	53.1	41.1	1.6	688
20-24	95.5	46.1	45.7	3.8	1,332
25-29	95.6	43.0	48.6	4.0	912
30-34	97.1	44.3	48.0	4.8	432
35-39	94.8	39.6	53.6	1.5	199
40-44	(98.1)	(51.9)	(44.2)	(1.9)	43
Residence					
Rural	95.7	45.3	47.0	3.4	2,724
Urban	95.9	49.0	43.8	3.2	880
Education					
Non-literate	95.4	43.1	48.3	4.1	2,277
0-9@years	95.9	49.7	44.2	2.0	889
10 years & above	97.3	55.4	39.5	2.4	438
Religion					
Hindu	95.7	47.0	45.2	3.4	3021
Muslim	96.2	42.2	50.8	3.2	575
Caste/tribe#					
Scheduled caste	94.5	44.6	46.0	3.9	927
Scheduled tribe	(94.9)	(38.5)	(51.3)	(5.1)	35
Other backward class	95.8	44.6	47.6	3.6	1,770
Other	97.4	52.2	42.8	2.3	835
DK	(96.8)	(41.9)	(51.6)	(3.2)	38
Standard of living index					
Low	95.3	45.3	45.9	4.0	2,031
Medium	96.7	44.5	49.3	2.9	1,044
High	95.8	52.8	41.1	1.8	530
Total	95.8	46.2	46.2	3.4	3,604

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. @ Literate women with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. ( ) Based on less than 50 unweighted cases. Total includes 9 cases of other religions that were not shown separately.

4.28 UTTARANCHAL

4.28.1 Weight for Age of Children:

In Uttaranchal, weight was measured for 55 percent of children under 6 years of age in sampled households. On the whole, data on weight are available for over 5 thousand children in the state. Table 4.28.1 shows the percentage of children under 6 years of age classified as undernourished, as measured by weight for age index by some selected background characteristics. In the following discussion, children whose weights in SD unit (Z score) is less than –3 would be referred to as 'severely underweight' and those with weight in SD unit less than –2 would be referred to simply as 'underweight'. More than one-fourth (26 percent) of the children in Uttaranchal are severely underweight and more than half (53 percent) of the children are underweight. The proportion of undernourished children increases rapidly with the child's age upto 6-11 months and shows a decrease thereafter. More than half (57 percent) of the children in the age group 6-11 months are severely underweight whereas more than three-fifth (70 percent) of the children in the same age group are underweight. By age 48-71 months the corresponding figures for severely underweight and underweight children stabilize at 10 and 45 percent, respectively.

Birth order of the child can also influence the nutritional status of the child. The second round of the RCH survey reveals that young children in families with six or more siblings are most likely to be underweight. Whereas 25 and 51 percent of children of first birth order are severely underweight and underweight respectively, the corresponding figures among children of birth order six or more are 28 and 50 percent, respectively. Female children are more likely (27 percent) to be severely underweight than male children (25 percent) whereas male children are more prone (57 percent) to be underweight than female children (48 percent). The extent of underweight children, in case of severe underweight, is higher in rural areas compared to that in urban areas. While around 25 percent children in urban areas are severely underweight, the corresponding figures for rural areas are 26 percent. On the other hand, children from urban areas are slightly more likely to be underweight than their rural counterparts.

Children's nutritional status is also expected to be influenced by mother's educational attainment. The nutritional status of the children does not vary much by the educational attainment of the mother. More than one-fourth of the children are severely underweight and more than half of the children are underweight, irrespective of the educational attainment of their mother.

The results of the RCH survey show that Muslim children tend to be more underweight than Hindu children. The percentage of underweight children among Hindus and Muslims is respectively 52 and 58 percent. Children from scheduled castes and other backward classes have the highest percentage of both severely underweight and underweight cases (for both 27 and 53 percent, respectively), whereas children belonging to the 'schedule tribe' are relatively better off than others.

Table 4.28.1 WEIGHT FOR AGE OF CHILDREN

Percentage of children (age 0-71 months) classified as undernourished by weight for age anthropometric matrix of nutritional status according to some selected background characteristics, Uttaranchal, 2002-04

Background characteristic	Weight for age		Number of children
	Percentage Below – 3 SD	Percentage Below – 2 SD[1]	
Age of child (in months)			
0-5	29.1	49.1	331
6-11	56.7	69.7	348
12-23	36.6	56.7	521
24-47	37.9	59.5	1,570
48-71	9.9	44.7	2,273
Birth order			
1	24.5	51.9	1,257
2-3	26.6	54.3	1,898
4-5	27.1	55.0	806
6+	27.6	49.8	325
Mother's not interviewed	24.0	49.6	746
Sex of the child			
Male	24.9	56.9	2,646
Female	26.8	47.8	2,397
Residence			
Rural	26.2	52.1	3,692
Urban	24.8	53.8	1,350
Mother's education			
Non-literate	26.9	52.7	2,043
0-9@years	25.6	54.5	1,226
10 years & above	25.9	52.4	1,012
Mother's not interviewed	23.3	49.4	762
Religion			
Hindu	24.6	51.5	4,186
Muslim	32.3	57.8	762
Sikh	30.2	64.1	68
Other	(20.0)	(40.0)	26
Caste/tribe#			
Scheduled caste	26.7	53.2	941
Scheduled tribe	21.8	47.8	141
Other backward class	27.3	53.2	1,131
Other	25.1	52.5	2,639
Standard of living index			
Low	27.0	52.7	1,983
Medium	26.1	54.1	1,687
High	23.8	50.5	1,373
Total	25.8	52.6	5,043

Note: This index is expressed in standard deviation units (SD) from the median of the International Reference Population. [1]Includes children who are below – 3 SD from the International Reference Population median. @ Literate mothers with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. Total includes 9 cases with missing information on birth order and 4 cases in mother's education that were not shown separately. ( ) Based on less than 50 unweighted cases.

As expected, household's standard of living index (SLI) is correlated with the malnourishment of children as reflected through the weight for age anthropometric measure. More than one-fourth (27 percent) of the children belonging to households of lower standard of living are severely underweight and more than half (53 percent) of the children in the same category are underweight. Whereas the corresponding figures for children belonging to high standard of living households are 24 and 51 percent, respectively.

Of the 13 districts in the state, in 1 district the percentage of underweight children in less than 30, in 5 districts their percentage is between 30 and 50, and in 7 districts their percentage is more than 50, Central and southern parts of the state shows high prevalence of underweight children.

4.28.2 Anaemia among Children, Adolescent Girls, and Pregnant Women

In Uttaranchal, haemoglobin level was measured for 50 percent of children under 6 years of age in sampled households. On the whole, the data on haemoglobin level are available for over 4 thousand children in the state. Table 4.28.2 shows the percent of children aged 0-71 months classified by the degree of anaemia and by selected background characteristics. Overall, 81 percent of the children have some level of anaemia, with 42 percent who are mildly anaemic, 37 percent who are moderately anaemic and 3 percent who are severely anaemic. Certain background characteristics of children show strong association with the level of anaemia. Some of them are: children aged 0-5 months (83 percent), children of higher birth order, more specifically, children of order six or more (85 percent), female children (82 percent), children who are severely underweight (87 percent), children from urban areas (91 percent), children of mothers having ten or more years of education (84 percent), Sikh children (97 percent), children of other backward classes (88 percent) and children belonging to households characterized by high standard of living (87 percent). But even in the socio-economic groups with the lowest level of anaemia, over two-thirds of children are anaemic. On the other hand, in no socio-economic group the prevalence of severe anaemia is more than five percent.

Of the 13 districts in the state, in 6 districts the percentage of children with severe or moderate anaemia is in less than 35, in 3 districts their percentage is between 35 and - 50, and in 4 districts their percentage is more than 50. Districts with high prevalence of anaemia among children are situated mainly in northern part of the state.

Data on anaemia levels are available for around 5 thousand adolescent girls aged 10-19 years who constituted 64 percent of the sample. Table 4.28.3 shows anaemia level for adolescent girls by selected background characteristics. In Uttaranchal, 91 percent of adolescent girls have any anaemia. Twenty three percent of them are mildly anaemic, 39 percent are moderately anaemic and 29 percent are having severe anaemia. It has been found from the survey results that except mild and moderate anaemia, the percentage of girls in the remaining two categories of anaemia increases with the increase in age from 10-14 to 15-19 years.

The incidence of any anaemia is higher (91 percent) among adolescent girls who are currently unmarried compared to that among their married counterpart (87 percent). Except mild anaemia, the occurrence of anaemia in the other categories is found to be higher in the urban areas than in rural areas. The prevalence of anaemia does not vary much with the educational attainment of girls. The level of anaemia is higher among Sikh adolescent girls (97 percent). Adolescent girls from 'other backward classes' are more likely to suffer from any anaemia. It is also interesting to note that adolescent girls from households with higher standard of living are more likely to be anaemic.

Of the 13 districts in the state, in 4 districts the percentage of adolescent girls with severe or moderate anaemia is in less than 50, in 2 districts their percentage is between 50 and 75, and in 7 districts their percentage is more than 75. Districts with high prevalence of anaemia among adolescent girls are situated mainly in central and southern parts of the state.

Haemoglobin levels were measured for nearly 400 pregnant women aged 15-44 years who constituted 46 percent of the sample. Table 4.28.4 shows the anaemia status among pregnant women according some selected background characteristics. Around 86 percent of the pregnant women in Uttaranchal are suffering from some anaemia. Among pregnant women, 44 percent have mild anaemia, 38 percent who have moderate anaemia and 3 percent have severe anaemia. Thus, although levels of any anaemia among pregnant women and adolescent girls are about the same, the prevalence of severe anaemia is substantially higher in adolescent girls (29 percent) than in pregnant women (3 percent). This may be because more stringent cut-off level for severe anaemia has been used in the case of adolescent girls (8 g/dl) than in the case of pregnant women (5 g/dl). Table 4.28.4 clearly shows that percentage of women with any anaemia rises steadily with the increase in the age of the pregnant women from 78 percent for the age group 15-19 to 90 percent in the age group 25-29. Women from urban areas are more likely to experience any anaemia than their rural counterparts. The prevalence of anaemia decreases with the level of educational attainment of the pregnant women. The level of anemia shows some variation with religion of the pregnant women. Pregnant women among other backward classes are more prone to be anaemic (98 percent) among all the caste/tribe categories. As expected, standard of living is not negatively associated with the anaemia status of the pregnant women. Around 80 percent pregnant women belonging to poor families are anaemic compared to 90 percent among women belonging to households with medium standard of living.

Table 4.28.2 ANAEMIA AMONG CHILDREN

Percentage of children (age 0-71 months) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Uttaranchal, 2002-04

Background characteristic	Parentage of children with any anaemia	Percentage of children with			Number of children
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age of child (in months)					
0-5	83.2	40.1	35.5	7.6	280
6-11	81.6	37.7	39.5	4.4	329
12-23	76.9	37.6	36.9	2.4	594
24-47	79.7	43.2	34.1	2.4	1,417
48-71	82.6	42.3	37.9	2.4	2,062
Birth order					
1	81.4	43.3	35.9	2.2	1,194
2-3	81.4	42.9	35.5	3.1	1,758
4-5	82.4	38.1	40.0	4.4	750
6+	85.0	35.5	48.0	1.6	286
Mother's not interviewed	75.9	41.1	32.5	2.3	694
Sex of the child					
Male	79.7	40.9	35.9	2.9	2,457
Female	82.3	42.1	37.4	2.8	2,217
Weight for age of children					
Normal	74.9	43.9	28.9	2.1	2,208
Below – 2 SD[1]	86.4	39.4	43.5	3.5	2,474
Below – 3 SD	87.1	38.7	44.2	4.2	1,281
Residence					
Rural	77.1	39.7	34.7	2.7	3,361
Urban	90.7	46.1	41.4	3.2	1,321
Mother's education					
Non-literate	82.3	37.9	40.5	3.9	1,898
0-9@years	78.8	43.2	32.8	2.7	1,086
10 years & above	84.4	46.5	36.4	1.4	993
Mother's not interviewed	76.1	41.4	32.4	2.2	705
Religion					
Hindu	78.8	41.4	34.7	2.7	3,851
Muslim	90.7	41.9	45.0	3.7	747
Sikh	97.2	40.7	56.5	0.0	63
Caste/tribe#					
Scheduled caste	82.0	38.7	38.6	4.7	859
Scheduled tribe	73.5	39.8	32.0	1.7	113
Other backward class	87.7	38.4	45.8	3.5	1,097
Other	77.6	43.2	32.5	2.0	2,429
Standard of living index					
Low	73.9	37.4	33.9	2.5	1,805
Medium	84.3	40.6	40.2	3.5	1,542
High	86.7	48.1	36.2	2.5	1,335
Total	81.0	41.5	36.6	2.8	4,682

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. [1] Includes children who are below – 3 SD from the International Reference median. @ Literate mothers with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. Total includes 8 cases with missing information on sex of child and 22 cases of other religions that were not shown separately.

Table 4.28.3 ANAEMIA AMONG ADOLESCENT GIRLS

Percentage of adolescent girls[1] (age 10-19 years) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Uttaranchal, 2002-04

Background characteristic	Parentage of adolescent with any anaemia	Percentage of adolescent with			Number of adolescent girls
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
10-14	89.9	24.1	39.0	26.8	2,770
15-19	91.4	21.7	38.8	30.8	2,334
Marital status					
Currently married	(87.1)	(19.4)	(38.7)	(29.0)	44
Currently not married	90.6	23.1	38.9	28.7	5,053
Residence					
Rural	88.5	23.5	37.8	27.2	3,526
Urban	95.2	21.9	41.5	31.8	1,578
Education					
Non-literate	93.8	20.1	38.3	35.5	463
0-9@years	89.7	23.6	38.4	27.8	3,737
10 years & above	92.4	22.0	41.7	28.7	904
Religion					
Hindu	89.6	24.2	38.4	27.1	4,301
Muslim	96.1	16.6	44.1	35.4	708
Sikh	97.2	16.5	23.0	57.7	69
Other	(81.8)	(27.3)	(36.4)	(18.2)	25
Caste/tribe#					
Scheduled caste	88.6	20.4	36.4	31.9	765
Scheduled tribe	86.9	9.2	63.8	13.9	89
Other backward class	94.7	17.9	42.2	34.5	1,175
Other	89.6	25.8	37.2	26.6	2,880
Standard of living index					
Low	86.2	24.4	35.3	26.5	1,722
Medium	91.6	22.2	40.6	28.8	1,599
High	93.9	22.3	41.0	30.5	1,782
Total	90.6	23.0	38.9	28.6	5,104

Note: Haemoglobin level between 10.0 - 11.9 g/dl is mild anaemia, 8.0 - 9.9 g/dl is moderate anaemia and below 8.0 g/dl is severe anaemia. [1] Includes currently married women age 15-19 years who were not pregnant at the time of survey. @ Literate adolescent with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. ( ) Based on less than 50 unweighted cases.

Table 4.28.4 ANAEMIA AMONG PREGNANT WOMEN

Percentage of pregnant women (age 15-44 years) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, Uttaranchal, 2002-04

Background characteristic	Parentage of pregnant women with any anaemia	Percentage of pregnant women with			Number of pregnant women
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
15-19	(78.4)	(37.8)	(35.1)	(5.4)	38
20-24	87.0	46.6	36.2	4.2	182
25-29	89.9	42.4	44.0	3.6	113
30-34	(78.1)	(53.1)	(25.0)	(0.0)	31
Residence					
Rural	83.2	43.6	35.8	3.8	289
Urban	92.9	46.1	45.2	1.6	92
Education					
Non-literate	88.0	35.6	46.3	6.1	150
0-9@years	84.0	47.2	36.6	0.2	132
10 years & above	83.8	53.3	27.5	2.9	99
Religion					
Hindu	83.7	44.7	36.3	2.7	326
Other	96.4	41.4	48.6	6.4	55
Caste/tribe#					
Scheduled caste	83.9	32.9	44.6	6.4	78
Other backward class	97.8	49.9	47.1	0.8	84
Other	82.5	47.7	31.5	3.3	203
Standard of living index					
Low	79.5	44.8	30.8	4.0	160
Medium	90.2	37.5	48.9	3.8	129
High	89.4	52.7	35.5	1.2	92
Total	85.5	44.2	38.0	3.2	381

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. @ Literate women with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. ( ) Based on less than 50 unweighted cases. Total includes 10 & 7 cases in age group category 35-39 & 40-44 and 5 & 11 cases in scheduled tribe & don't know caste that were not shown separately.

4.29 WEST BENGAL

4.29.1 Weight for Age of Children:

In West Bengal, weight was measured for 73 percent of children under 6 years of age in sampled households. On the whole, data on weight are available for nearly 9 thousand children in the state. Table 4.29.1 shows the percentage of children under 6 years of age classified as undernourished, as measured by weight for age index by some selected background characteristics. In the following discussion, children whose weights in SD unit (Z score) is less than –3 would be referred to as 'severely underweight' and those with weight in SD unit less than –2 would be referred to simply as 'underweight'. More than one-tenth (13 percent) of the children in West Bengal are severely underweight and more than two-fifth (45 percent) of the children are underweight. The proportion of undernourished children increases rapidly with the child's age upto 12-23 months and shows a decrease thereafter. Around one-fifth (19 percent) of the children in the age group 12-23 months are severely underweight whereas more than half (51 percent) of the children in the same age group are underweight. By age 48-71 months the corresponding figures for severely underweight and underweight children stabilize at 12 and 48 percent, respectively.

Birth order of the child can also influence the nutritional status of the child. The second round of the RCH survey reveals that young children in families with six or more siblings are most likely to be underweight. Whereas 10 and 40 percent of children of first birth order are severely underweight and underweight respectively, the corresponding figures among children of birth order six or more are 18 and 51 percent, respectively. The observed sex differential both in severe underweight and underweight children is marginal. The extent of underweight children, both severe underweight and underweight, is higher in rural areas compared to that in urban areas. While around 9 and 36 percent children in urban areas are severely underweight and underweight, the corresponding figures for rural areas are 14 and 48 percent respectively.

Children's nutritional status is also expected to be influenced by mother's educational attainment. Children whose mothers are non-literate are more than three times as likely to be severely underweight as compared to children whose mothers have ten or more years of schooling. A similar pattern is also found in the case of underweight children. The percentage of underweight children is 54 among non-literate mothers while it is 24 among mothers with ten or more years of schooling.

The results of the RCH survey show that Muslim children tend to be slightly more underweight than Hindu children. The percentage of underweight children among Hindus and Muslims is respectively 43 and 50 percent. Children from scheduled tribes have the highest percentage of both severely underweight and underweight cases (16 and 50 percent, respectively), whereas children belonging to the 'other backward classes' are relatively better off than others. As expected, household's standard of living index (SLI) is strongly correlated with the malnourishment of children as reflected through the weight for age anthropometric measure.

Table 4.29.1 WEIGHT FOR AGE OF CHILDREN

Percentage of children (age 0-71 months) classified as undernourished by weight for age anthropometric matrix of nutritional status according to some selected background characteristics, West Bengal, 2002-04

Background characteristic	Weight for age		Number of children
	Percentage Below – 3 SD	Percentage Below – 2 SD[1]	
Age of child (in months)			
0-5	1.7	8.7	637
6-11	5.9	32.4	736
12-23	19.1	51.0	1,431
24-47	15.4	49.1	3,059
48-71	12.0	48.3	3,074
Birth order			
1	10.1	39.8	2,837
2-3	14.2	47.7	3,677
4-5	16.3	52.3	1,009
6+	18.0	50.9	508
Mother's not interviewed	11.4	37.5	906
Sex of the child			
Male	12.2	44.7	4,543
Female	14.0	45.1	4,395
Residence			
Rural	14.4	47.9	6,616
Urban	9.2	36.4	2,321
Mother's education			
Non-literate	17.7	54.4	3,365
0-9@years	11.4	43.1	3,680
10 years & above	4.9	24.3	800
Mother's not interviewed	10.6	36.7	1,093
Religion			
Hindu	12.2	42.5	5,903
Muslim	15.0	49.9	2,905
Christian	9.5	46.7	71
Other	9.3	36.2	59
Caste/tribe#			
Scheduled caste	14.9	47.4	2,522
Scheduled tribe	16.1	50.3	582
Other backward class	8.2	43.1	496
Other	12.2	43.2	4,986
Standard of living index			
Low	15.8	50.9	5,578
Medium	10.0	39.8	2,447
High	4.6	21.5	913
Total	13.1	44.9	8,937

Note: This index is expressed in standard deviation units (SD) from the median of the International Reference Population. [1]Includes children who are below – 3 SD from the International Reference Population median. @ Literate mothers with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases.

More than one-tenth (16 percent) of the children belonging to households of lower standard of living are severely underweight and around half of the children in the same category are underweight. Whereas the corresponding figures for children belonging to high standard of living households are 5 and 22 percent, respectively.

Of the 18 districts in the state, in 2 districts the percentage of underweight children in less than 30, in 12 districts their percentage is between 30 and 50, and in 4 districts their percentage is more than 50. South and central parts of the state shows high prevalence of underweight children.

4.29.2 Anaemia among Children, Adolescent Girls, and Pregnant Women

In West Bengal, haemoglobin level was measured for 62 percent of children under 6 years of age in sampled households. On the whole, the data on haemoglobin level are available for over 6 thousand children in the state. Table 4.29.2 shows the percent of children aged 0-71 months classified by the degree of anaemia and by selected background characteristics. Overall, 97 percent of the children have some level of anaemia, with 64 percent who are mildly anaemic, 31 percent who are moderately anaemic and 2 percent who are severely anaemic. Certain background characteristics of children show strong association with the level of anaemia. Some of them are: children aged 6-11 months (99 percent), children of higher birth order, more specifically, children of order six or more (98 percent), children who are severely underweight (98 percent), children from rural areas (98 percent), children of mothers non-literate (98 percent), Muslim children (98 percent), children of scheduled tribes (99 percent) and children belonging to households characterized by low standard of living (98 percent). But even in the socio-economic groups with the lowest level of anaemia, more than four-fifth of children are anaemic. On the other hand, in no socio-economic group the prevalence of severe anaemia is more than four percent.

Of the 18 districts in the state, in 9 districts the percentage of children with severe or moderate anaemia is in less than 35, in 7 districts their percentage is between 35 and 50, and in 2 districts their percentage is more than 50. Districts with high prevalence of anaemia among children are situated mainly in north and central-east parts of the state.

Data on anaemia levels are available for more than 5 thousand adolescent girls aged 10-19 years who constituted 58 percent of the sample. Table 4.29.3 shows anaemia level for adolescent girls aged 10-19 years by selected background characteristics. In West Bengal, 98 percent of adolescent girls have any anaemia. Twenty five percent of them are mildly anaemic, 55 percent are moderately anaemic and 18 percent are having severe anaemia. It has been found from the survey results that except mild and moderate anaemia, the percentage of girls in the remaining two categories of anaemia increases marginally with the increase in age from 10-14 to 15-19 years. The incidence of any anaemia is higher (99 percent) among adolescent girls who are currently married compared to that among their unmarried counterpart (69 percent). Except mild anaemia, the occurrence of anaemia in the other categories is found to be higher in rural areas than in urban areas.

The prevalence of any anaemia is found to be higher (99 percent) among non-literate adolescent girls. The level of anaemia does not vary among different religion group. Adolescent girls from scheduled caste & scheduled tribes are more likely to suffer from any anaemia. Adolescent girls from households with low standard of living are slightly more likely to be anaemic.

Of the 18 districts in the state, in 3 districts the percentage of adolescent girls with severe or moderate anaemia is in less than 50, in 5 districts their percentage is between 50 and 75, and in 10 districts their percentage is more than 75. Districts with high prevalence of anaemia among adolescent girls are situated mainly in central-west and northern parts of the state.

Haemoglobin levels were measured for more than 400 pregnant women aged 15-44 years who constituted 57 percent of the sample. Table 4.29.4 shows the anaemia status among pregnant women according some selected background characteristics. Around 97 percent of the pregnant women in West Bengal are suffering from some anaemia. Among pregnant women, 61 percent have mild anaemia, 33 percent who have moderate anaemia and 4 percent who have severe anaemia. Thus, although levels of any anaemia among pregnant women and adolescent girls are about the same, the prevalence of severe anaemia is substantially higher in adolescent girls (18 percent) than in pregnant women (4 percent). This may be because more stringent cut-off level for severe anaemia has been used in the case of adolescent girls (8 g/dl) than in the case of pregnant women (5 g/dl). Table 4.29.4 clearly shows that percentage of women with any anaemia rises marginally with the increase in the age of the pregnant women from 97 percent for the age group 15-19 to 99 percent in the age group 25-29. Except mild anaemia, women from rural areas are more likely to experience other three categories of anaemia. The prevalence of anaemia does not vary much with the level of educational attainment of the pregnant women. Muslim women are found to be more anaemic (99 percent) than Hindu women (96 percent). Pregnant women among schedule are more prone to be anaemic (100 percent) among all the caste/tribe categories. As expected, standard of living is negatively associated with the anaemia status of the pregnant women. Around 98 percent pregnant women belonging to poor families are anaemic compared to 80 percent among women belonging to households with higher standard of living.

Table 2.29.2 ANAEMIA AMONG CHILDREN

Percentage of children (age 0-71 months) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, West Bengal, 2002-04

Background characteristic	Parentage of children with any anaemia	Percentage of children with			Number of children
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age of child (in months)					
0-5	97.4	43.3	50.0	4.0	441
6-11	98.9	51.0	45.0	2.9	568
12-23	98.3	54.0	42.4	1.9	1,104
24-47	97.3	65.5	29.3	2.5	2,300
48-71	96.3	74.6	19.8	1.9	2,432
Birth order					
1	97.1	68.5	26.3	2.4	2,113
2-3	97.2	62.8	32.2	2.2	2,792
4-5	97.4	59.4	36.6	1.4	779
6+	97.7	59.9	34.1	3.7	374
Mother's not interviewed	97.6	65.2	29.8	2.6	786
Sex of the child					
Male	97.2	64.6	30.5	2.1	3,479
Female	97.3	63.9	30.9	2.5	3,365
Weight for age of children					
Normal	97.1	65.6	29.5	2.0	3,815
Below – 2 SD[1]	97.5	62.6	32.2	2.7	3,029
Below – 3 SD	97.8	61.1	33.0	3.7	871
Residence					
Rural	97.7	61.9	33.1	2.7	5,377
Urban	95.7	72.9	21.9	0.9	1,467
Mother's education					
Non-literate	98.2	58.3	37.3	2.6	2,617
0-9@years	96.9	66.8	27.6	2.5	2,841
10 years & above	94.8	80.7	13.3	0.8	508
Mother's not interviewed	97.2	64.5	31.0	1.7	878
Religion					
Hindu	96.8	63.6	31.1	2.0	4,482
Muslim	98.3	65.7	29.7	2.9	2,264
Other	93.0	59.4	33.0	0.7	98
Caste/tribe#					
Scheduled caste	98.2	58.8	37.7	1.8	2,034
Scheduled tribe	99.1	49.7	45.1	4.3	466
Other backward class	96.7	60.6	33.8	2.3	403
Other	96.5	69.1	25.0	2.4	3,666
Standard of living index					
Low	98.1	59.3	36.0	2.7	4,461
Medium	96.5	72.1	22.4	1.9	1,805
High	93.3	77.8	15.4	0.1	578
Total	97.3	64.3	30.7	2.3	6,844

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. [1] Includes children who are below – 3 SD from the International Reference median. @ Literate mothers with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases.

Table 2.29.3 ANAEMIA AMONG ADOLESCENT GIRLS

Percentage of adolescent girls[1] (age 10-19 years) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, West Bengal, 2002-04

Background characteristic	Parentage of adolescent with any anaemia	Percentage of adolescent with			Number of adolescent girls
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
10-14	98.1	25.8	55.2	17.0	2,804
15-19	98.6	24.6	55.0	19.1	2,381
Marital status					
Currently married	99.0	17.8	57.5	23.7	834
Currently not married	98.2	26.7	54.6	16.9	4,351
Residence					
Rural	98.8	22.4	56.9	19.5	3,775
Urban	97.2	32.9	50.3	13.9	1,411
Education					
Non-literate	98.9	17.7	53.3	27.9	802
0-9@years	98.3	26.0	55.9	16.4	3,994
10 years & above	97.1	32.8	50.8	13.5	389
Religion					
Hindu	98.4	24.1	55.4	18.9	3,391
Muslim	98.2	27.1	54.6	16.4	1,729
Other	98.3	36.1	49.7	12.6	65
Caste/tribe#					
Scheduled caste	99.2	21.1	56.5	21.6	1,422
Scheduled tribe	99.1	16.1	48.0	35.1	279
Other backward class	97.9	24.6	58.9	14.3	275
Other	97.8	27.4	54.9	15.5	3,013
Standard of living index					
Low	99.0	21.4	56.5	21.0	2,975
Medium	97.4	29.2	53.3	14.8	1,651
High	97.8	34.1	52.4	11.3	560
Total	98.3	25.3	55.1	18.0	5,185

Note: Haemoglobin level between 10.0 - 11.9 g/dl is mild anaemia, 8.0 - 9.9 g/dl is moderate anaemia and below 8.0 g/dl is severe anaemia. [1] Includes currently married women age 15-19 years who were not pregnant at the time of survey. @ Literate adolescent with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases.

Table 2.29.4 ANAEMIA AMONG PREGNANT WOMEN

Percentage of pregnant women (age 15-44 years) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, West Bengal, 2002-04

Background characteristic	Parentage of pregnant women with any anaemia	Percentage of pregnant women with			Number of pregnant women
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
15-19	96.7	60.6	33.0	3.2	199
20-24	96.6	66.1	25.6	4.9	159
25-29	98.6	56.2	38.5	3.9	71
30-34	(80.6)	(41.9)	(35.5)	(3.2)	26
Residence					
Rural	98.2	59.9	33.9	4.4	360
Urban	93.9	64.0	28.5	1.4	108
Education					
Non-literate	96.6	54.2	39.6	2.7	156
0-9@years	97.5	63.2	29.7	4.6	282
10 years & above	(86.1)	(72.2)	(13.9)	(0.0)	30
Religion					
Hindu	96.4	58.3	33.9	4.2	292
Muslim	98.6	66.7	28.9	3.0	167
Caste/tribe#					
Scheduled caste	100.0	56.4	39.6	4.1	134
Scheduled tribe	(74.3)	(37.1)	(25.7)	(11.4)	31
Other backward class	(75.6)	(48.8)	(24.4)	(2.4)	33
Other	96.5	65.6	27.6	3.3	251
Standard of living index					
Low	98.3	58.1	35.5	4.7	276
Medium	94.9	62.8	29.0	3.0	145
High	(79.5)	(70.5)	(9.1)	(0.0)	47
Total	97.2	60.9	32.7	3.7	468

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. @ Literate women with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. ( ) Based on less than 50 unweighted cases. Total includes 9 & 4 cases in age group category 35-39 & 40-44, 9 cases of other religions and 19 cases in don't know castes that were not shown separately.

4.30 ANDAMAN & NICOBAR ISLAND

4.30.1 Weight for Age of Children

In Andaman & Nicobar Island, weight was measured for 66 percent of children under 6 years of age in sampled households. On the whole, data on weight are available for over nine hundred children in the state. Table 4.30.1 shows the percentage of children under 6 years of age classified as undernourished, as measured by weight for age index by some selected background characteristics. In the following discussion, children whose weights in SD unit (Z score) is less than –3 would be referred to as 'severely underweight' and those with weight in SD unit less than –2 would be referred to simply as 'underweight'. Six percent of the children in Andaman & Nicobar Island are severely underweight and one-third (30 percent) of the children are underweight. The proportion of undernourished children increases rapidly with the child's age upto 24-47 months and shows a decrease thereafter. Seven percent of the children in the age group 24-47 months are severely underweight where as more than one-third (33 percent) of the children in the same age group are underweight. By age 48-71 months the corresponding figures for severely underweight and underweight children six and 37 percent, respectively.

Birth order of the child can also influence the nutritional status of the child. The second round of the RCH survey reveals that young children in families with six or more siblings are most likely to be underweight. Whereas five and 28 percent of children of first birth order are severely underweight and underweight respectively, the corresponding figures among children of birth order six or more are 31 percent, each respectively. The observed sex differential both in severe underweight and underweight children is marginal. The extent of underweight children, both severe underweight and underweight, is higher in rural areas compared to that in urban areas. While around five and 26 percent children in urban areas are severely underweight and underweight, the corresponding figures for rural areas are six and 31 percent respectively.

Children's nutritional status is also expected to be influenced by mother's educational attainment. Children whose mothers are non-literate are about more than twice as likely to be severely underweight as compared to children whose mothers have ten or more years of schooling. In the case of underweight, children of non-literate mothers are more like to be underweight. The percentage of underweight children is 35 among non-literate mothers while it is 24 among mothers with ten or more years of schooling.

The results of the RCH survey show that Muslim children tend to be slightly more underweight than Christian children. The percentage of underweight children among Christians and Muslims is respectively 29 and 31 percent. Children from scheduled castes have shown the highest percentage (12 percent) in severely underweight and other backward class have the highest percentage in underweight cases (40 percent), whereas children belonging to the scheduled tribe' category are relatively better off than others. As expected, household's standard of living index (SLI) is strongly correlated with the malnourishment of children as reflected through the weight for age anthropometric measure.

Table 4.30.1 WEIGHT FOR AGE OF CHILDREN

Percentage of children (age 0-71 months) classified as undernourished by weight for age anthropometric measure of nutritional status according to some selected background characteristics, Andaman & Nicobar island, 2002-04

Background characteristic	Weight for age		Weighted number of children
	Percentage Below – 3 SD	Percentage Below – 2 SD[1]	
Age of child (in months)			
0-5	2.0	6.1	61
6-11	2.2	14.0	93
12-23	5.1	30.1	154
24-47	7.3	32.5	344
48-71	6.4	36.5	275
Birth order			
1	5.3	28.0	341
2-3	6.2	31.2	452
4-5	6.5	36.8	50
Mother's not interviewed	3.7	24.7	78
Sex of the child			
Male	5.0	32.5	460
Female	6.6	26.9	467
Residence			
Rural	6.1	30.5	765
Urban	4.5	26.1	163
Mother's education			
Non-literate	10.2	35.1	165
0-9@years	5.5	32.5	402
10 years & above	4.2	23.9	282
Mother's not interviewed	3.7	24.7	78
Religion			
Hindu	6.0	30.2	506
Muslim	6.9	30.8	70
Christian	5.2	28.7	342
Caste/tribe#			
Scheduled caste	12.0	31.1	86
Scheduled tribe	4.8	26.9	250
Other backward class	6.4	40.1	38
Others	5.7	31.3	483
Standard of living index			
Low	8.9	40.8	198
Medium	6.9	32.2	352
High	3.1	21.5	378
Total	5.8	29.7	928

Note: This index is expressed in standard deviation units (SD) from the median of the International Reference Population. [1]Includes children who are below – 3 SD from the International Reference Population median. Total includes 5 cases of six or more in birth order, 9 cases of other religion, were not shown separately. @ Literate mothers with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases.

Nine percent of the children belonging to households of lower standard of living are severely underweight and around two-fifth of the children in the same category are underweight. Whereas the corresponding figures for children belonging to high standard of living households are three and 22 percent, respectively.

Of the 2 districts in the state, in one district the percentage of underweight children in less than 30 and in one district their percentage is between 30 and 50. Northern part of the state shows moderate prevalence of underweight children.

4.30.2 Anaemia among Children, Adolescent Girls, and Pregnant Women

In Andaman & Nicobar Island, haemoglobin level was measured for 64 percent of children under 6 years of age in sampled households. On the whole, the data on haemoglobin level are available for over 8 hundred children in the state. Table 4.30.2 shows the percent of children aged 0-71 months classified by the degree of anaemia and by selected background characteristics. Overall, 72 percent of the children have some level of anaemia, with 52 percent who are mildly anaemic, 18 percent who are moderately anaemic and two percent who are severely anaemic. Certain background characteristics of children show strong association with the level of anaemia. Some of them are: children aged 0-5 months (82 percent), children of higher birth order, more specifically, children of order of four to five (83 percent), female children (74 percent), children who are normal weight (72 percent), children from rural areas (76 percent), children of non-literate mothers (77 percent), Christian children (88 percent), children of schedule tribe (93 percent) and children belonging to households characterized by low standard of living (76 percent). But even in the socio-economic groups with the lowest level of anaemia, over three-fifth of the children are anaemic. On the other hand, in no socio-economic group the prevalence of severe anaemia is more than four percent.

Of both the 2 districts in the state, the percentage of children with severe or moderate anaemia is in less than 35

Data on anaemia levels are available for more than 4 hundred adolescent girls aged 10-19 years who constituted 49 percent of the sample. Table 4.30.3 shows anaemia levels for adolescent girls by selected background characteristics. In Andaman & Nicobar Island, 74 percent of adolescent girls have any anaemia. Forty-two percent of them are mildly anaemic, 23 percent are moderately anaemic and 9 percent is having severe anaemia. It has been found from the survey results that the percentage of girls in the anaemia increases with the increase in age from 10-14 to 15-19 years. Except mild anaemia, the occurrence of anaemia in the other categories is found to be higher in rural areas than in urban areas. The prevalence of anaemia varies much with the educational attainment of girls. The level of anaemia is higher among Christian adolescent girls (86 percent). Adolescent girls from schedule tribe are more likely to suffer from any anaemia. Adolescent girls from households with low standard of living are more likely to be anaemic.

Of the 2 districts in the state, in one district the percentage of adolescent girls with severe or moderate anaemia is in less than 50 and in one district their percentage is between 50 and 75. Districts with moderate prevalence of anaemia among adolescent girls are situated mainly in southern part of the state.

Haemoglobin levels were measured for 66 pregnant women aged 15-44 years who constituted 64 percent of the sample. Table 4.30.4 shows the anaemia status among pregnant women according some selected background characteristics. Around 71 percent of the pregnant women in Andaman & Nicobar Island are suffering from some anaemia. Among pregnant women, 50 percent have mild anaemia and 19 percent who have moderate anaemia and one percent who have severe anaemia. Thus although levels of any anaemia among pregnant women and adolescent girls are about the same, the prevalence of severe anaemia is substantially higher in adolescent girls (9 percent) than in pregnant women (1 percent). This more became more stringent cut off level for severe anaemia has been used in the case of adolescent girls (8 g/dl) than in case of pregnant women (5 g/dl). Table 4.30.4 clearly shows the prevalence of anaemia diminishes substantially with the level of educational attainment of the pregnant women. However, all the figures are based on very few cases of less than 50 observations. Hence these figures should be used and interpreted cautiously.

Table 4.30.2 ANAEMIA AMONG CHILDREN

Percentage of children (age 0-71 months) classified as having iron-deficiency anaemia by degree of anaemia and by selected background characteristics, Andaman & Nicobar island, 2002-04

Background characteristic	Parentage of children with any anaemia	Percentage of children with			Weighted number of children
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age of child (in months)					
0-5	(81.6)	(36.7)	(42.9)	(2.0)	49
6-11	80.1	55.7	18.9	5.5	83
12-23	78.9	52.8	25.5	0.6	148
24-47	67.8	50.4	15.5	1.9	329
48-71	67.8	54.3	12.2	1.3	261
Birth order					
1	68.3	47.7	17.9	2.6	321
2-3	71.9	55.0	15.5	1.4	423
4-5	(83.3)	(58.3)	(22.9)	(2.1)	48
Mother's not interviewed	79.1	48.8	29.2	1.1	76
Sex of the child					
Male	69.3	48.0	20.1	1.2	422
Female	73.5	55.5	15.6	2.4	449
Weight for age of children					
Normal	71.7	51.4	18.6	1.7	629
Below – 2 SD[1]	70.9	53.1	15.5	2.2	241
Below – 3 SD	(63.6)	(38.6)	(22.7)	(2.3)	44
Residence					
Rural	75.8	53.7	20.1	2.0	721
Urban	50.4	43.1	6.5	0.8	149
Mother's education					
Non-literate	77.2	54.3	19.6	3.3	153
0-9@years	71.7	52.4	17.6	1.7	377
10 years & above	65.5	50.4	13.7	1.4	267
Mother's not interviewed	80.3	49.6	29.6	1.1	74
Religion					
Hindu	61.1	49.5	10.1	1.5	471
Muslim	59.6	51.2	8.5	0.0	58
Others	88.2	55.3	30.3	2.6	330
Caste/tribe#					
Scheduled caste	70.2	53.1	16.0	1.0	83
Scheduled tribe	93.1	53.6	36.0	3.5	248
Other backward class	76.5	61.8	11.8	2.9	33
Others	60.7	49.9	9.6	1.2	436
Standard of living index					
Low	75.8	57.0	17.1	1.7	192
Medium	78.2	50.4	25.0	2.8	326
High	62.9	50.5	11.5	0.9	353
Total	71.5	51.9	17.8	1.8	870

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. [1] Includes children who are below – 3 SD from the International Reference median. Total includes 4 cases of birth order six or more and 11 cases of other religions that were not show separately. @ Literate mothers with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. ( ) Based on less than 50 unweighted cases.

Table 4.30.3 ANAEMIA AMONG ADOLESCENT GIRLS

Percentage of adolescent girls[1] (age 10-19 years) classified as having iron-deficiency anaemia by degree of anaemia and by selected background characteristics, Andaman & Nicobar island, 2002-04

Background characteristic	Parentage of adolescent with any anaemia	Percentage of adolescent with			Number of adolescent girls
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
10-14	68.4	42.4	21.7	4.4	269
15-19	79.7	42.3	24.4	13.0	242
Marital status					
Currently not married	73.5	41.8	23.2	8.5	506
Residence					
Rural	75.9	41.2	24.3	10.5	352
Urban	69.0	45.0	20.0	4.0	159
Education					
0-9@years	71.7	42.6	21.9	7.2	416
10 years & above	82.1	41.4	26.7	14.0	92
Religion					
Hindu	70.1	45.6	19.6	4.9	330
Muslim	69.8	32.8	24.4	12.6	69
Others	86.2	36.9	31.8	17.4	105
Caste/tribe#					
Scheduled caste	(90.7)	(37.2)	(34.9)	(18.6)	28
Scheduled tribe	(93.9)	(31.8)	(39.2)	(23.0)	47
Others	71.2	42.1	22.6	6.5	371
Standard of living index					
Low	78.0	43.5	27.9	6.7	82
Medium	76.5	40.0	26.3	10.1	176
High	70.5	43.6	19.0	7.9	253
Total	73.8	42.4	23.0	8.5	511

Note: Haemoglobin level between 10.0 - 11-9 g/dl is mild anaemia, 8.0 - 9.9 g/dl is moderate anaemia and below 8.0 g/dl is severe anaemia. [1] Includes currently married women age 15-19 years who were not pregnant at the time of survey. @ Literate adolescent with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. Total includes 5 cases of currently married 4 cases of illiterate, 7 cases of other religion 8 cases other backward caste that were not shown separately. ( ) Based on less than 50 unweighted cases.

Table 4.30.4 ANAEMIA AMONG PREGNANT WOMEN

Percentage of pregnant women (age 15-44 years) classified as having iron-deficiency anaemia by degree of anaemia and by selected background characteristics, Andaman & Nicobar island, 2002-0 4

Background characteristic	Parentage of pregnant women with any anaemia	Percentage of pregnant women with			Number of pregnant women
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
20-24	(76.9)	(34.6)	(38.5)	(3.8)	27
25-29	(80.8)	(38.5)	(42.3)	(0.0)	26
Residence					
Rural	(88.7)	(35.8)	(47.2)	(5.7)	43
Urban	(53.3)	(46.7)	(6.7)	(0.0)	25
Education					
0-9@years	(87.1)	(38.7)	(41.9)	(6.5)	27
10 years & above	(71.4)	(39.3)	(32.1)	(0.0)	33
Religion					
Hindu	(84.6)	(46.2)	(35.9)	(2.6)	47
Caste/tribe#					
Other	(72.2)	(47.2)	(25.0)	(0.0)	49
Standard of living index					
High	(71.4)	(42.9)	(28.6)	(0.0)	41
Total	70.6	50.4	19.2	1.0	68

Note: Haemoglobin level between 8.0 - 10,9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. @ Literate women with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. Total includes 6,8 and 2 cases of age group 15-19, 30-34 and 35-39 respectively that were not shown separately. Total includes 8 cases of non-literate, 21 cases of other religion, 1 cases of SC, 4 and 2 cases of ST and OBC and 12 cases of do not known in caste were not shown separately, 6 and 22 cases of low and medium Standard of living index also that were not shown separately.

4.31 CHANDIGARH

4.31.1 Weight for Age of Children

In Chandigarh, weight was measured for 35 percent of children under 6 years of age in sampled households. On the whole, data on weight are available nearly two hundred children in the state. Table 4.31.1 shows the percentage of children under 6 years of age classified as undernourished, as measured by weight for age index by some selected background characteristics. In the following discussion, children whose weight in SD unit (Z score) is less than –3 would be referred to as 'severely underweight' and those with weight in SD unit less than –2 would be referred to simply as 'underweight'. Around ten percent of the children in Chandigarh are severely underweight and more than one-third (35 percent) of the children are underweight. The proportion of undernourished children increases rapidly with the child's age upto 12-23 months and shows a decrease thereafter. More than one-tenth (13 percent) of the children in the age group 12-23 months are severely underweight whereas nearly half (48 percent) of the children in the same age group are underweight. By age 48-71 months the corresponding figures for severely underweight and underweight children are 8 and 27 percent, respectively.

Birth order of the child can also influence the nutritional status of the child. The second round of the RCH survey reveals that young children in families with 4-5 siblings are most likely to be underweight. Whereas 9 and 30 percent of children of first birth order are severely underweight and underweight respectively, the corresponding figures among children of birth order 4-5 are 21 and 57 percent, respectively. The observed sex differential both in severe underweight and underweight children is marginal. The extent of underweight children, severe underweight is higher in urban areas compared to that in rural areas and underweight, is higher in rural areas compared to that in urban areas. While around 10 and 34 percent children in urban areas are severely underweight and underweight, the corresponding figures for rural areas are 10 and 42 percent respectively.

Children's nutritional status is also expected to be influenced by mother's educational attainment. Children whose mothers are non-literate are about slightly more severely underweight as compared to children whose mothers have ten or more years of schooling. But in the case of underweight children non-literate mothers are about more than twice as likely to be underweight as compared to children whose mothers have ten or more years of schooling. The percentage of underweight children is 49 among non-literate mothers while it is 21 among mothers with ten or more years of schooling.

The results of the RCH survey show that Hindu children tend to be more underweight than other religion children. The percentage of underweight children among other religions and Hindus is respectively 23 and 37 percent. Children from other castes have the highest percentage in severely underweight and scheduled castes have the highest percentage in underweight children (12 and 38 percent, respectively), whereas children belonging to the 'other backward class castes' category are relatively better off than others.

As expected, household's standard of living index (SLI) is strongly correlated with the malnourishment of children as reflected through the weight for age anthropometric measure. More than one-tenth (14 percent) of the children belonging to households of lower standard of living are severely underweight and more than half of the children in the same category are underweight. Whereas the corresponding figures for children belonging to high standard of living households are 11 and 30 percent, respectively. In the 1 surveyed district in the state, the percentage of underweight children is between 30 and 50.

Table 4.31.1 WEIGHT FOR AGE OF CHILDREN

Percentage of children (age 0-71 months) classified as undernourished by weight for age anthropometric measure of nutritional status according to some selected background characteristics, Chandigarh, 2002-04

Background characteristic	Weight for age: Percentage Below –3 SD	Weight for age: Percentage Below – 2 SD[1]	Weighted number of children
Age of child (in months)			
12-23	(12.9)	(48.4)	31
24-47	11.1	36.1	72
48-71	8.0	26.7	75
Birth order			
1	9.3	29.6	54
2-3	6.7	30.0	90
4-5	(21.4)	(57.1)	28
Sex of the child			
Male	11.6	43.2	95
Female	9.0	28.0	100
Residence			
Rural	(9.7)	(41.9)	31
Urban	10.4	34.1	164
Mother's education			
Non-literate	9.2	49.2	65
0-9@years	(16.3)	(37.2)	43
10 years & above	7.5	20.9	67
Religion			
Hindu	10.7	37.3	169
Other	(7.7)	(23.1)	26
Caste/tribe#			
Scheduled caste	(7.1)	(38.1)	42
Other	12.3	35.2	122
Standard of living index			
Medium	7.1	39.3	56
High	11.1	29.9	117
Total	10.3	35.4	195

Note: This index is expressed in standard deviation units (SD) from the median of the International Reference Population. [1]Includes children who are below – 3 SD from the International Reference Population median. @ Literate mothers with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. Total includes 17 cases on age of child and 8 cases on birth order 6 or more and 15 cases with missing information on birth order and 20 cases mothers education and 22 cases in standard of living that were not shown separately.

4.31.2 Anaemia among Children and Adolescent Girls

In Chandigarh, haemoglobin level was measured for 27 percent of children under 6 years of age in sampled households. On the whole, the data on haemoglobin level are available for over one hundred children in the state. Table 4.31.2 shows the percent of children aged 0-71 months classified by the degree of anaemia and by selected background characteristics. Overall, 97 percent of the children have some level of anaemia, with 23 percent who are mildly anaemic, 61 percent who are moderately anaemic and 3 percent who are severely anaemic. Certain background characteristics of children show strong association with the level of anaemia. Some of them are: children aged 24-47 months (100 percent), children of higher birth order, more specifically, children of order two to three (99 percent), female children (99 percent), children who are underweight (100 percent), children from rural areas (100 percent), children of 0-9 of education mothers (100 percent), Hindu children (98 percent), children of other (99 percent) and children belonging to households characterized by high standard of living (100 percent). But even in the socio-economic groups with the lowest level of anaemia, more than ninety percent of children are anaemic. On the other hand, in no socio-economic group the prevalence of severe anaemia is more than three percent. In the 1 surveyed district in the state, the percentage of anaemic children is more than 50.

Data on anaemia levels are available for about one hundred adolescent girls aged 10-19 years who constituted 28 percent of the sample. Table 4.31.3 shows anaemia levels for adolescent girls by selected background characteristics. In Chandigarh, 99 percent of adolescent girls have any anaemia. Sixteen percent of them are mildly anaemic, 56 percent are moderately anaemic and 26 percent are having severe anaemia. It has been found from the survey results that except moderate anaemia, the percentage of girls in the remaining three categories of anaemia increase with the increase in age from 10-14 to 15-19 years. The incidence of any anaemia is (99 percent) among adolescent girls who are currently unmarried. The prevalence of anaemia does not vary much with the educational attainment of girls. Adolescent girls from 'other castes' are more likely to suffer from any anaemia. It is also interesting to note that adolescent girls from households with higher standard of living are slightly more likely to be anaemic. In the 1 surveyed district in the state, the percentage of adolescent girls suffering from anaemia is more than 75.

Table 4.31.2 ANAEMIA AMONG CHILDREN

Percentage of children (age 0-71 months) classified as having iron-deficiency anaemia by degree of anaemia and by selected background characteristics, Chandigarh, 2002-04

Background characteristic	Parentage of children with any anaemia	Percentage of children with			Weighted number of children
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age of child (in months)					
12-23	(92.0)	(16.0)	(68.0)	(8.0)	25
24-47	100.0	27.8	70.4	1.9	54
48-71	96.6	46.6	48.3	1.7	58
Birth order					
1	(95.0)	(35.0)	(57.5)	(2.5)	40
2-3	98.6	33.8	60.8	4.1	74
Sex of the child					
Male	95.7	34.3	57.1	4.3	70
Female	98.7	31.6	64.6	2.5	79
Weight for age of children					
Normal	96.0	39.4	51.5	4.0	99
Below – 2 SD[1]	100.0	20.0	78.0	2.0	50
Residence					
Rural	(100.0)	(46.2)	(50.0)	(3.8)	26
Urban	96.7	30.1	63.4	3.3	123
Mother's education					
Non-literate	94.7	28.1	61.4	5.3	57
0-9@years	(100.0)	(18.2)	(81.8)	(0.0)	33
10 years & above	(97.9)	(47.9)	(45.8)	(4.2)	48
Religion					
Hindu	97.7	34.9	58.9	3.9	129
Caste/tribe#					
Scheduled caste	(97.4)	(23.1)	(71.8)	(2.6)	39
Other	98.9	37.8	56.7	4.4	90
Standard of living index					
Medium	96.0	28.0	64.0	4.0	50
High	100.0	38.3	59.3	2.5	81
Total	97.3	32.9	61.1	3.4	149

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. [1] Includes children who are below – 3 SD from the International Reference median. Total includes 1 and 11 cases in 0-5 months and 6-11 months of age group respectively. 5 and 9 cases with missing information on birth order 6 or more and mother not interviewed, 12 cases in – 3SD, 20 cases on other religion and 3 & 17 cases scheduled tribe and other backward class and 18 cases in low standard of living index that were not shown separately. @ Literate mothers with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases ( ) Based on less than 50 unweighted cases.

Table 4.31.3 ANAEMIA AMONG ADOLESCENT GIRLS

Percentage of adolescent girls[1] (age 10-19 years) classified as having iron-deficiency anaemia by degree of anaemia and by selected background characteristics, Chandigarh, 2002-04

Background characteristic	Parentage of adolescent with any anaemia	Percentage of adolescent with			Number of adolescent girls
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
10-14	97.1	13.0	63.8	20.3	69
15-19	100.0	19.7	47.9	32.4	71
Marital status					
Currently not married	98.6	16.4	55.7	26.4	140
Residence					
Urban	98.4	16.3	56.1	26.0	123
Education					
0-9@years	97.9	10.4	60.4	27.1	96
10 years & above	(100.0)	(31.6)	(44.7)	(23.7)	38
Religion					
Hindu	98.3	17.1	53.0	28.2	117
Caste/tribe#					
Scheduled caste	(97.0)	(9.1)	(45.5)	(42.4)	33
Other	98.9	20.0	56.7	22.2	90
Standard of living index					
High	99.1	16.8	54.9	27.4	113
Total	98.6	16.4	55.7	26.4	140

Note: Haemoglobin level between 10.0 - 11.9 g/dl is mild anaemia, 8.0 - 9.9 g/dl is moderate anaemia and below 8.0 g/dl is severe anaemia. [1] Includes currently married women age 15-19 years who were not pregnant at the time of survey. @ Literate adolescent with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. ( ) Based on less than 50 unweighted cases.

4.32 DAMAN & DIU

4.32.1 Weight for Age of Children

In Daman & Diu, weight was measured for 66 percent of children under 6 years of age in sampled households. On the whole, data on weight are available for over 8 hundred children in the state. Table 4.32.1 shows the percentage of children under 6 years of age classified as undernourished, as measured by weight for age index by some selected background characteristics. In the following discussion, children whose weights in SD unit (Z score) is less than –3 would be referred to as 'severely underweight' and those with weights in SD unit less than –2 would be referred to simply as 'underweight'. More than one-tenth (13 percent) of the children in Daman & Diu are severely underweight and more than two-fifth (44 percent) of the children are underweight. The proportion of undernourished children increases rapidly with the child's age upto 6-11 months and shows a decrease thereafter. More than one-tenth (16 percent) of the children in the age group 6-11 months are severely underweight whereas more than one-third (34 percent) of the children in the same age group are underweight. By age 48-71 months the corresponding figures for severely underweight and underweight children are 13 and 51 percent, respectively.

Birth order of the child can also influence the nutritional status of the child. The second round of the RCH survey reveals that young children in families with six or more siblings are most likely to be underweight. Whereas 12 and 39 percent of children of first birth order are severely underweight and underweight respectively, the corresponding figures among children of birth order four to five 16 and 53 percent, respectively. The observed sex differential both in severe underweight and underweight children is marginal. The extent of underweight children, both severe underweight and underweight, is higher in rural areas compared to that in urban areas. While around 12 and 36 percent children in urban areas are severely underweight and underweight, the corresponding figures for rural areas are 14 and 48 percent respectively.

Children's nutritional status is also expected to be influenced by mother's educational attainment. Children whose mothers are non-literate are likely to be more severe underweight as compared to children whose mothers have ten or more years of schooling. But different pattern is found in the case of underweight children. The percentage of underweight children is 47 among non-literate mothers while it is 32 among mothers with ten or more years of schooling.

The results of the RCH survey show that Hindu children tend to be more underweight than Muslim children. The percentage of underweight children among Muslims and Hindus is respectively 25 and 45 percent. Children from scheduled castes have the highest percentage in severely underweight and scheduled tribe have the highest percentage in underweight cases (19 and 64 percent, respectively), whereas children belonging to the 'other castes' category are relatively better off than others.

Table 4.32.1 WEIGHT FOR AGE OF CHILDREN

Percentage of children (age 0-71 months) classified as undernourished by weight for age anthropometric measure of nutritional status according to some selected background characteristics, Daman & Diu, 2002-04

Background characteristic	Weight for age		Weighted number of children
	Percentage Below – 3 SD	Percentage Below – 2 SD[1]	
Age of child (in months)			
0-5	(1.7)	(3.4)	40
6-11	15.7	34.0	78
12-23	11.9	42.3	125
24-47	14.7	44.6	323
48-71	13.1	51.4	309
Birth order			
1	11.9	38.6	264
2-3	11.3	44.8	427
4-5	16.1	52.7	101
6+	(14.3)	(55.1)	26
Mother's not interviewed	27.9	40.9	57
Sex of the child			
Male	11.9	43.9	431
Female	14.5	43.7	444
Residence			
Rural	13.9	47.8	569
Urban	11.9	36.3	307
Mother's education			
Non-literate	14.1	47.4	238
0-9@years	12.2	50.5	339
10 years & above	10.2	31.5	241
Mother's not interviewed	27.9	40.9	57
Religion			
Hindu	13.4	45.3	794
Muslim	6.2	24.9	63
Caste/tribe#			
Scheduled caste	19.3	55.1	102
Scheduled tribe	17.5	63.6	71
Other backward class	13.1	42.7	333
Other	10.7	35.1	286
Standard of living index			
Low	24.3	65.3	110
Medium	10.4	44.7	392
High	12.8	36.5	374
Total	13.2	43.8	875

Note: This index is expressed in standard deviation units (SD) from the median of the International Reference Population. [1]Includes children who are below – 3 SD from the International Reference Population median. Total includes 18 cases of other religions that were not shown separately. @ Literate mothers with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases.

As expected, household's standard of living index (SLI) is strongly correlated with the malnourishment of children as reflected through the weight for age anthropometric measure. More than one-fifth (24 percent) of the children belonging to households of lower standard of living are severely underweight and around three-fifth of the children in the same category are underweight. Whereas the corresponding figures for children belonging to high standard of living households are 13 and 37 percent, respectively. In all the 2 surveyed districts in the state, the percentage of underweight children is between 30 and 50.

4.32.2 Anaemia among Children, Adolescent Girls, and Pregnant Women

In Daman & Diu, haemoglobin level was measured for 48 percent of children under 6 years of age in sampled households. On the whole, the data on haemoglobin level are available for over six hundred children in the state. Table 4.32.2 shows the percent of children aged 0-71 months classified by the degree of anaemia and by selected background characteristics. Overall, 100 percent of the children have some level of anaemia, with 39 percent who are mildly anaemic, 57 percent who are moderately anaemic and 4 percent who are severely anaemic. Certain background characteristics of children show strong association with the level of anaemia. Some of them are: children aged 24-71 months (100 percent), children of birth order first and children of order 4-5 (100 percent), female children (100 percent), children who are severely underweight and underweight (100 percent), children of mothers with 0-9 years of education (100 percent), children belonging to 'other' religious groups (100 percent), children of schedule castes and scheduled tribes (100 percent) and children belonging to households characterized by low standard of living (100 percent). But even in the socio-economic groups with the lowest level of anaemia, over ninety percent of children are anaemic. On the other hand, in no socio-economic group the prevalence of severe anaemia is more than five percent. In all the 2 surveyed districts in the state, the percentage of anaemic children is more than 50.

Data on anaemia levels are available for about five hundred adolescent girls aged 10-19 years who constituted 50 percent of the sample. Table 4.32.3 shows anaemia levels for adolescent girls by selected background characteristics. In Daman & Diu, 100 percent of adolescent girls have any anaemia. Seven percent of them are mildly anaemic, 48 percent are moderately anaemic and 45 percent are having severe anaemia. It has been found from the survey results that except any anaemia, the percentage of girls in the remaining three categories of anaemia diminishes with the increase in age from 10-14 to 15-19 years. The incidence of any anaemia is (100 percent) among adolescent girls who are currently unmarried. Except severe anaemia, the occurrence of anaemia in the other categories is found to be higher in urban areas than in rural areas. The prevalence of anaemia does not vary with the educational attainment of girls. The level of anaemia is among Hindu adolescent girls (100 percent). It is interesting to note that adolescent girls from households with all standards of living are equally to be anaemic. In all the 2 surveyed districts in the state, the percentage of adolescent girls suffering from anaemia is more than 75.

Haemoglobin levels were measured for 48 pregnant women aged 15-44 years who constituted 56 percent of the sample. Table 4.32.4 shows the anaemia status among pregnant women according some selected background characteristics. Around 100 percent of the pregnant women in Daman & Diu are suffering from some anaemia. Among pregnant women, 33 percent have mild anaemia, 67 percent who have moderate anaemia and one percent has severe anaemia. Thus, although levels of any anaemia among pregnant women and adolescent girls are about the same, the prevalence of severe anaemia is substantially higher in adolescent girls (45 percent) than in pregnant women (1 percent). This may be because more stringent cut-off level for severe anaemia has been used in the case of adolescent girls (8 g/dl) than in the case of pregnant women (5 g/dl). However, all the figures are based on very few cases of less than 50 observations. Hence these figures should be used and interpreted cautiously.

Table 4.32.2 ANAEMIA AMONG CHILDREN

Percentage of children (age 0-71 months) classified as having iron-deficiency anaemia by degree of anaemia and by selected background characteristics, Daman & Diu, 2002-04

Background characteristic	Parentage of children with any anaemia	Percentage of children with			Weighted number of children
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age of child (in months)					
6-11	(100.0)	(21.6)	(70.3)	(8.1)	37
12-23	99.6	35.8	57.7	6.0	102
24-47	100.0	33.6	64.6	1.9	213
48-71	100.0	48.5	49.9	1.6	246
Birth order					
1	100.0	31.0	66.2	2.8	184
2-3	99.7	41.2	54.6	4.0	296
4-5	100.0	41.9	54.3	3.8	70
Mother's not interviewed	(100.0)	(50.0)	(50.0)	(0.0)	48
Sex of the child					
Male	99.7	36.3	61.4	2.0	295
Female	100.0	42.2	52.8	5.0	323
Weight for age of children					
Normal	99.8	39.1	56.2	4.5	358
Below – 2 SD[1]	100.0	39.9	57.9	2.2	260
Below – 3 SD	100.0	48.9	47.9	3.3	69
Residence					
Rural	99.9	40.9	56.9	2.1	437
Urban	99.8	35.9	56.9	7.0	181
Mother's education					
Non-literate	99.7	39.8	57.3	2.6	171
0-9@years	100.0	39.9	54.9	5.2	244
10 years & above	99.7	33.1	63.6	3.0	156
Mother's not interviewed	(100.0)	(50.0)	(50.0)	(0.0)	48
Religion					
Hindu	99.8	37.9	58.2	3.7	571
Other	(100.0)	(42.4)	(51.5)	(6.1)	47
Caste/tribe#					
Scheduled caste	100.0	51.9	46.2	1.9	71
Scheduled tribe	(100.0)	(7.1)	(78.6)	(14.3)	39
Other backward class	99.8	43.7	51.1	4.9	222
Other	100.0	32.6	65.0	2.4	219
Standard of living index					
Low	100.0	38.1	57.2	4.6	83
Medium	99.9	40.2	57.5	2.1	315
High	99.8	38.7	55.9	5.1	220
Total	99.9	39.4	56.9	3.5	618

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. [1] Includes children who are below – 3 SD from the International Reference median. Total includes 20 cases of age group 0-5 months and birth orders 6+ were not shown separately. @ Literate mothers with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases ( ) Based on less than 50 unweighted cases.

Table 4.32.3 ANAEMIA AMONG ADOLESCENT GIRLS

Percentage of adolescent girls[1] (age 10-19 years) classified as having iron-deficiency anaemia by degree of anaemia and by selected background characteristics, Daman & Diu, 2002-04

Background characteristic	Parentage of adolescent with any anaemia	Percentage of adolescent with			Number of adolescent girls
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
10-14	100.0	8.5	51.4	40.2	293
15-19	100.0	5.6	43.1	51.3	255
Marital status					
Currently not married	100.0	7.2	47.8	44.9	541
Residence					
Rural	100.0	8.6	53.1	38.2	393
Urban	100.0	3.3	33.3	63.4	154
Education					
0-9@years	100.0	7.0	49.7	43.2	396
10 years & above	100.0	7.8	42.9	49.4	130
Religion					
Hindu	100.0	6.5	48.1	45.3	516
Other	(100.0)	(8.3)	(45.8)	(45.8)	32
Caste/tribe#					
Scheduled caste	100.0	9.3	45.0	45.7	69
Scheduled tribe	(100.0)	(0.0)	(46.2)	(53.8)	28
Other backward class	100.0	9.3	47.0	43.7	225
Other	100.0	5.8	50.0	44.2	186
Standard of living index					
Low	(100.0)	(11.5)	(42.3)	(46.2)	48
Medium	100.0	7.4	50.9	41.6	263
High	100.0	5.8	44.6	49.6	237
Total	100.0	7.1	47.5	45.3	548

Note: Haemoglobin level between 10.0 - 11.9 g/dl is mild anaemia, 8.0 - 9.9 g/dl is moderate anaemia and below 8.0 g/dl is severe anaemia. [1] Includes currently married women age 15-19 years who were not pregnant at the time of survey. @ Literate adolescent with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. Total includes 7 currently married adolescent and 21 cases of non-literate that were not shown separately. ( ) Based on less than 50 unweighted cases.

Table 4.32.4 ANAEMIA AMONG PREGNANT WOMEN

Percentage of pregnant women (age 15-44 years) classified as having iron-deficiency anaemia by degree of anaemia and by selected background characteristics, Daman & Diu, 2002-04

Background characteristic	Parentage of pregnant women with any anaemia	Percentage of pregnant women with			Number of pregnant women
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
20-24	(100.0)	(32.0)	(64.0)	(4.0)	30
Residence					
Rural	(100.0)	(36.7)	(60.0)	(3.3)	32
Religion					
Hindu	(100.0)	(32.6)	(65.1)	(2.3)	42
Total	100.0	32.5	66.7	0.8	50

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. @ Literate women with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. Total includes 4, 15 and 1 cases in age group category 15-19, 25-29 and 30-34 respectively were not shown separately. Total includes 17 cases in urban, 50 cases in mother's education, 8 cases of other religions, 38 cases in caste and 49 cases in standards of living index that were not shown separately. ( ) Based on less than 50 unweighted cases.

4.33 DADRA & NAGAR HAVELI

4.33.1 Weight for Age of Children

In Dadra & Nagar Haveli, weight was measured for 77 percent of children under 6 years of age in sampled households. On the whole, data on weight are available for over six hundred children in the state. Table 4.33.1 shows the percentage of children under 6 years of age as classified as undernourished, measured by weight for age index by some selected background characteristics. In the following discussion, children whose weight in SD unit (Z score) is less than –3 would be referred to as 'severely underweight' and those with weight in SD unit less than –2 would be referred to simply as 'underweight'. More than one-tenth (16 percent) of the children in Dadra & Nagar Haveli are severely underweight and nearly half (49 percent) of the children are underweight. The proportion of undernourished children increases rapidly with the child's age upto 24-47 months and shows a decrease thereafter. Around (19 percent) of the children in the age group 12-23 months are severely underweight whereas more than half (55 percent) of the children in the same age group are underweight. By age 48-71 months the corresponding figures for severely underweight and underweight children stabilize at 18 and 56 percent, respectively.

Birth order of the child can also influence the nutritional status of the child. The second round of the RCH survey reveals that young children in families with 4-5 siblings are most likely to be underweight. Whereas 12 and 42 percent of children of first birth order are severely underweight and underweight respectively, the corresponding figures among children of birth order 4-5 are 19 and 56 percent, respectively. The observed sex differential both in severe underweight and underweight children is marginal. The extent of underweight children, both severe underweight and underweight, is higher in rural areas compared to that in urban areas. Four and 27 percent children in urban areas are severely underweight and underweight, the corresponding figures for rural areas are 19 and 54 percent respectively.

Children's nutritional status is also expected to be influenced by mother's educational attainment. Children whose mothers are non-literate are about four times as likely to be severely underweight as compared to children whose mothers have ten or more years of schooling. Similarly, incase of underweight children non-literate mothers are more underweight than literate mothers. The percentage of underweight children is 54 among non-literate mothers while it is 38 among mothers with ten or more years of schooling.

The results of the RCH survey show that Christian children tend to be slightly more underweight than Hindu children. The percentage of underweight children among Hindus and Christians is respectively 49 and 50 percent. Children from scheduled castes have shown the highest percentage of severely underweight and scheduled tribe have the highest percentage of underweight cases (24 and 56 percent, respectively), whereas children belonging to the 'other castes' category are relatively better off than others. As expected, household's standard of living index (SLI) is strongly correlated with the malnourishment of children as reflected through weight for age anthropometric measure.

Table 4.33.1 WEIGHT FOR AGE OF CHILDREN

Percentage of children (age 0-71 months) classified as undernourished by weight for age anthropometric measure of nutritional status according to some selected background characteristics, Dadra & Nagar Haveli, 2002-04

Background characteristic	Weight for age		Weighted number of children
	Percentage Below – 3 SD	Percentage Below – 2 SD[1]	
Age of child (in months)			
0-5	0.0	10.7	56
6-11	15.7	31.4	51
12-23	13.8	52.1	94
24-47	19.4	55.1	216
48-71	18.0	55.8	217
Birth order			
1	12.4	42.2	185
2-3	15.7	48.8	281
4-5	19.0	56.0	84
6+	(28.9)	(63.2)	38
Mother's not interviewed	(17.4)	(54.3)	46
Sex of the child			
Male	16.7	51.1	317
Female	15.5	47.0	317
Residence			
Rural	19.0	54.3	510
Urban	4.0	27.4	124
Mother's education			
Non-literate	20.0	53.8	340
0-9@years	15.0	44.4	133
10 years & above	5.2	37.9	116
Mother's not interviewed	(17.8)	(55.6)	45
Religion			
Hindu	16.3	49.2	551
Christian	18.0	50.0	50
Other	(9.1)	(45.5)	33
Caste/tribe#			
Scheduled caste	(24.0)	(40.0)	25
Scheduled tribe	21.2	55.6	405
Other backward class	(2.3)	(37.2)	43
Other	5.3	37.3	150
Standard of living index			
Low	19.6	56.2	306
Medium	19.5	47.6	185
High	4.2	35.7	143
Total	16.1	49.1	634

Note: This index is expressed in standard deviation units (SD) from the median of the International Reference Population. [1]Includes children who are below – 3 SD from the International Reference Population median. Total includes 54 cases with missing information on birth order and 18 cases in mother's education and 4 cases in standard of living that were not shown separately. @ Literate mothers with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases.

Around one-fifth of the children belonging to households of lower standard of living are severely underweight and more than half of the children in the same category are underweight. Whereas the corresponding figures for children belonging to high standard of living households are 4 and 36 percent, respectively. In the 1 surveyed district in the state, the percentage of underweight children is between 30 and 50.

4.33.2 Anaemia among Children, Adolescent Girls, and Pregnant Women

In Dadra & Nagar Haveli, haemoglobin level was measured for 70 percent of children under 6 years of age in sampled households. On the whole, the data on haemoglobin level are available for nearly five hundred children in the state. Table 4.33.2 shows the percent of children aged 0-71 months classified by the degree of anaemia and by selected background characteristics. Overall, 100 percent of the children have some level of anaemia, with 9 percent who are mildly anaemic, 78 percent who are moderately anaemic and 11 percent who are severely anaemic. Certain background characteristics of children show strong association with the level of anaemia. Some of them are: children aged 0-23 months (100 percent), children of higher birth order, more specifically, children of order 4-5 and six or more (100 percent), children who are underweight (100 percent), children from urban areas (100 percent), children of mother with 10 years & above education (100 percent), Hindu children (100 percent), children of other backward class (100 percent) and children belonging to households characterized by high standard of living (100 percent). But even in the socio-economic groups with the lowest level of anaemia, over eighty percent of children are anaemic. On the other hand, in no socio-economic group the prevalence of severe anaemia is more than 20 percent. In the 1 surveyed district in the state, the percentage of anaemic children is more than 50.

Data on anaemia levels are available for about two hundred adolescent girls aged 10-19 years who constituted 56 percent of the sample. Table 4.33.3 shows anaemia levels for adolescent girls (100 percent) and no such variations found by selected background characteristics in Dadra & Nagar Haveli. In the 1 surveyed district in the state, the percentage of adolescent girls suffering from anaemia is more than 75.

Haemoglobin levels were measured for nearly 50 pregnant women aged 15-44 years who constituted 80 percent of the sample. Table 4.33.4 shows the anaemia status among pregnant women (100 percent) and there is no variations found according some selected background characteristics.

Table 4.33.2 ANAEMIA AMONG CHILDREN

Percentage of children (age 0-71 months) classified as having iron-deficiency anaemia by degree of anaemia and by selected background characteristics, Dadra & Nagar Haveli, 2002-04

Background characteristic	Parentage of children with any anaemia	Percentage of children with			Weighted number of children
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age of child (in months)					
0-5	(100.0)	(12.5)	(68.8)	(18.8)	32
6-11	(100.0)	(4.9)	(78.0)	(17.1)	41
12-23	100.0	4.2	75.0	20.8	72
24-47	99.4	10.3	81.7	7.4	175
48-71	99.4	10.7	81.9	6.8	177
Birth order					
1	99.3	9.5	78.8	10.9	137
2-3	99.5	9.1	77.7	12.7	220
4-5	100.0	8.3	84.7	6.9	72
6+	(100.0)	(6.3)	(87.5)	(6.3)	32
Mother's not interviewed	(100.0)	(13.9)	(77.8)	(8.3)	36
Sex of the child					
Male	99.6	10.9	75.4	13.3	248
Female	99.6	7.6	83.9	8.0	249
Weight for age of children					
Normal	99.6	8.8	77.9	12.9	240
Below – 2 SD[1]	99.6	9.7	81.3	8.6	257
Below – 3 SD	98.9	6.5	88.0	4.3	92
Residence					
Rural	99.8	9.8	82.2	7.7	428
Urban	98.6	5.8	63.8	29.0	69
Mother's education					
Non-literate	99.7	9.3	82.1	8.3	290
0-9@years	99.0	7.8	77.7	13.6	103
10 years & above	100.0	8.7	73.9	17.4	69
Mother's not interviewed	(100.0)	(14.3)	(77.1)	(8.6)	35
Religion					
Hindu	99.8	9.0	79.3	11.5	435
Other	98.4	11.3	82.3	4.8	62
Caste/tribe#					
Scheduled tribe	99.7	8.5	83.3	7.9	342
Other backward class	(100.0)	(17.1)	(74.3)	(8.6)	35
Other	98.9	10.6	70.2	18.1	94
Standard of living index					
Low	99.6	11.6	81.8	6.2	258
Medium	99.3	5.2	80.4	13.7	153
High	100.0	9.3	72.1	18.6	86
Total	99.6	9.3	79.7	10.7	497

Note: Haemoglobin level between 8.0 - 10,9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. [1] Includes children who are below – 3 SD from the International Reference median. Total includes 54, 104, 10 cases with missing information on birth order, sex of child, mother's education respectively and 4 cases in standard of living index that were not shown separately. @ Literate mothers with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases ( ) Based on less than 50 unweighted cases.

Table 4.33.3 ANAEMIA AMONG ADOLESCENT GIRLS

Percentage of adolescent girls[1] (age 10-19 years) classified as having iron-deficiency anaemia by degree of anaemia and by selected background characteristics, Dadra & Nagar Haveli, 2002-04

Background characteristic	Parentage of adolescent with any anaemia	Percentage of adolescent with			Number of adolescent girls
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
10-14	100.0	1.4	19.0	79.6	142
15-19	100.0	0.0	26.0	74.0	104
Marital status					
Currently married	(100.0)	(0.0)	(28.0)	(72.0)	25
Currently not married	100.0	0.9	21.3	77.8	221
Residence					
Rural	100.0	0.5	23.4	76.1	205
Urban	(100.0)	(2.4)	(14.6)	(82.9)	41
Education					
Non-literate	100.0	0.0	28.6	71.4	63
0-9@years	100.0	1.2	19.8	79.0	162
Religion					
Hindu	100.0	0.9	23.0	76.1	213
Other	(100.0)	(0.0)	(15.2)	(84.8)	33
Caste/tribe#					
Scheduled tribe	100.0	0.0	23.9	76.1	163
Other	100.0	0.0	16.7	83.3	54
Standard of living index					
Low	100.0	0.0	24.6	75.4	122
Medium	100.0	2.9	17.6	79.4	68
High	100.0	0.0	21.4	78.6	56
Total	100.0	0.8	22.0	77.2	246

Note: Haemoglobin level between 10.0 - 11.9 g/dl is mild anaemia, 8.0 - 9.9 g/dl is moderate anaemia and below 8.0 g/dl is severe anaemia. [1] Includes currently married women age 15-19 years who were not pregnant at the time of survey. @ Literate adolescent with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. In religion 2 cases of missing are not shown separately. ( ) Based on less than 50 unweighted cases.

Table 4.33.4 ANAEMIA AMONG PREGNANT WOMEN

Percentage of pregnant women (age 15-44 years) classified as having iron-deficiency anaemia by degree of anaemia and by selected background characteristics, Dadra & Nagar Haveli, 2002-04

Background characteristic	Parentage of pregnant women with any anaemia	Percentage of pregnant women with			Number of pregnant women
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
20-24	(100.0)	(10.7)	(85.7)	(3.6)	28
Residence					
Rural	(100.0)	(10.3)	(84.6)	(5.1)	39
Religion					
Hindu	(100.0)	(8.5)	(87.2)	(4.3)	47
Caste/tribe#					
Scheduled tribe	(100.0)	(6.3)	(90.6)	(3.1)	32
Standard of living index					
Low	(100.0)	(11.1)	(88.9)	(0.0)	27
Total	100.0	7.8	88.2	3.9	51

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. @ Literate women with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. Total includes 17 cases in age group category 40-44, 1 case in other religion and 3 don't know cases in caste that were not shown separately. One missing case in education was not shown separately. ( ) Based on less than 50 unweighted cases.

4.34 LAKSHADWEEP

4.34.1 Weight for Age of Children

In Lakshadweep, weight was measured for 71 percent of children under 6 years of age in sampled households. On the whole, data on weights are available for nearly seven hundred children in the state. Table 4.34.1 shows the percentage of children under 6 years of age classified as undernourished, as measured by weight for age index by some selected background characteristics. In the following discussion, children whose weights in SD unit (Z score) is less than –3 would be referred to as 'severely underweight' and those with weight in SD unit less than –2 would be referred to simply as 'underweight'. More than one-tenth (14 percent) of the children in Lakshadweep are severely underweight and more than two-fifth (42 percent) of the children are underweight. The proportion of undernourished children increases rapidly with the child's age upto 12-23 months and shows a decrease thereafter. Around one-fourth (26 percent) of the children in the age group 12-23 months are severely underweight whereas more than half (56 percent) of the children in the same age group are underweight. By age 48-71 months the corresponding figures for severely underweight and underweight children stabilize at 13 and 48 percent, respectively.

Birth order of the child can also influence the nutritional status of the child. The second round of the RCH survey reveals that young children in families with six or more siblings are most likely to be underweight. Whereas 10 and 35 percent of children of first birth order are severely underweight and underweight respectively, the corresponding figures among children of birth order six or more are 23 and 50 percent, respectively. The observed sex differential both in severe underweight and underweight children is marginal. The extent of underweight children, severe underweight is higher in urban areas compared to that in rural areas and underweight, is higher in rural areas compared to that in urban areas. While around 14 and 41 percent children in urban areas are severely underweight and underweight, the corresponding figures for rural areas are 13 and 43 percent respectively.

Children's nutritional status is also expected to be influenced by mother's educational attainment. Children whose mothers are non-literate are about slightly more likely to be severely underweight as compared to children whose mothers have ten or more years of schooling. A similar pattern is also found in the case of underweight children. Their percentage is 33 among non-literate mothers while it is 34 percent among mothers with ten or more years of schooling. As expected, household's standard of living index (SLI) is strongly correlated with the malnourishment of children as reflected through weight for age anthropometric measure. More than one-tenth (17 percent) of the children belonging to households of medium standard of living are severely underweight and around half of the children in the same category are underweight. Whereas the corresponding figures for children belonging to high standard of living households are 12 and 37 percent, respectively. In the 1 surveyed district in the state, the percentage of underweight children is between 30 and 50.

Table 4.34.1 WEIGHT FOR AGE OF CHILDREN

Percentage of children (age 0-71 months) classified as undernourished by weight for age anthropometric measure of nutritional status according to some selected background characteristics, Lakshadweep, 2002-04

Background characteristic	Weight for age		Weighted number of children
	Percentage Below – 3 SD	Percentage Below – 2 SD[1]	
Age of child (in months)			
0-5	(2.6)	(2.6)	39
6-11	(16.3)	(26.5)	49
12-23	26.4	55.5	110
24-47	9.8	41.1	224
48-71	12.9	47.9	194
Birth order			
1	10.1	34.8	158
2-3	12.7	44.3	221
4-5	15.0	51.4	107
6+	23.1	50.0	52
Mother's not interviewed	16.7	33.3	78
Sex of the child			
Male	15.8	43.2	292
Female	12.0	41.4	324
Residence			
Rural	13.3	43.3	353
Urban	14.4	40.7	263
Mother's education			
Non-literate	(7.1)	(33.3)	42
0-9@years	15.3	47.1	380
10 years & above	7.8	33.9	115
Mother's not interviewed	19.0	35.4	79
Religion			
Muslim	14.0	42.7	607
Caste/tribe#			
Scheduled tribe	14.0	42.6	608
Standard of living index			
Medium	17.1	51.8	222
High	12.0	37.0	392
Total	13.8	42.2	616

Note: This index is expressed in standard deviation units (SD) from the median of the International Reference Population. [1]Includes children who are below – 3 SD from the International Reference Population median. Total includes 9 cases with missing information of religion and 2 cases on standard of living that were not shown separately. @ Literate mothers with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases.

4.34.2 Anaemia among Children and Adolescent Girls

In Lakshadweep, haemoglobin level was measured for 16 percent of children under 6 years of age in sampled households. On the whole, the data on haemoglobin level are available for over one hundred children in the state. Table 4.34.2 shows the percent of children aged 0-71 months classified by the degree of anaemia and by selected background characteristics. Overall, 95 percent of the children have some level of anaemia, with 71 percent who are mildly anaemic, 23 percent who are moderately anaemic and 1 percent who are severely anaemic. Certain background characteristics of children show strong association with the level of anaemia. Some of them are: children aged 24-47 months (100 percent), children of higher birth order, more specifically, children of order 2-3 (95 percent), female children (94 percent), children who are underweight (98 percent), children from urban areas (98 percent), children of mothers having 0-9 years of education (95 percent), Muslim children (95 percent), children of schedule tribe (95 percent) and children belonging to households characterized by high standard of living (95 percent). But even in the socio-economic groups with the lowest level of anaemia, over ninety percent of children are anaemic. On the other hand, in no socio-economic group the prevalence of severe anaemia is more than two percent. In the 1 surveyed district in the state, the percentage of anaemic children is less than 30.

Data on anaemia levels are available for over three hundred adolescent girls aged 10-19 years who constituted 42 percent of the sample. Table 4.34.3 shows anaemia levels for adolescent girls by selected background characteristics. In Lakshadweep, 95 percent of adolescent girls have any anaemia. Sixty-six percent of them are mildly anaemic, 23 percent are moderately anaemic and 6 percent are having severe anaemia. It has been found from the survey results that except mild anaemia, the percentage of girls in the remaining three categories of anaemia diminishes with the decrease in age from 10-14 to 15-19 years. Except moderate anaemia, the occurrence of anaemia in the other categories is found to be higher in urban areas than in rural areas. Except mild anaemia, the prevalence of anaemia in other categories is found to be higher among women having 0-9 years of education. The level of anaemia is among Muslim adolescent girls (95 percent). It is also note that adolescent girls from households with medium standard of living are slightly more likely to be anaemic. In the 1 surveyed district in the state, the percentage of adolescent girls suffering from anaemia is less than 50.

Table 4.34.2 ANAEMIA AMONG CHILDREN

Percentage of children (age 0-71 months) classified as having iron-deficiency anaemia by degree of anaemia and by selected background characteristics, Lakshadweep, 2002-04

Background characteristic	Parentage of children with any anaemia	Percentage of children with			Weighted number of children
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age of child (in months)					
24-47	(100.0)	(76.1)	(23.9)	(0.0)	46
48-71	92.1	72.4	17.1	2.6	76
Birth order					
1	(91.7)	(72.2)	(16.7)	(2.8)	36
2-3	94.6	75.0	19.6	0.0	56
Sex of the child					
Male	95.6	69.1	25.0	1.5	68
Female	94.4	71.8	21.1	1.4	71
Weight for age of children					
Normal	93.1	73.6	19.5	0.0	87
Below – 2 SD[1]	98.1	65.4	28.8	3.8	52
Residence					
Rural	92.4	62.0	29.1	1.3	
Urban	98.3	81.7	15.0	1.7	79
					60
Mother's education					
0-9@years	95.4	67.8	26.4	1.1	87
10 years & above	(92.6)	(77.8)	(14.8)	(0.0)	27
Religion					
Muslim	94.8	69.6	23.7	1.5	135
Caste/tribe#					
Scheduled tribe	94.8	69.6	23.7	1.5	135
Standard of living index					
Medium	94.4	66.7	25.9	1.9	54
High	95.3	72.9	21.2	1.2	85
Total	95.0	70.5	23.0	1.4	139

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. [1] Includes children who are below – 3 SD from the International Reference median. Total includes 54, 104, 10 cases with missing information on birth order, sex of child, mother's education respectively and 4 cases of standard of living index that were not shown separately. @ Literate mothers with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases ( ) Based on less than 50 unweighted cases.

Table 4.34.3 ANAEMIA AMONG ADOLESCENT GIRLS

Percentage of adolescent girls[1] (age 10-19 years) classified as having iron-deficiency anaemia by degree of anaemia and by selected background characteristics, Lakshadweep, 2002-04

Background characteristic	Parentage of adolescent with any anaemia	Percentage of adolescent with			Number of adolescent girls
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
10-14	95.8	61.4	25.3	9.0	166
15-19	93.9	69.9	20.2	3.7	163
Marital status					
Currently not married	95.0	65.5	23.3	6.2	322
Residence					
Rural	94.1	63.6	25.1	5.3	187
Urban	95.8	68.3	19.7	7.7	142
Education					
0-9@years	95.7	65.6	23.2	6.9	276
10 years & above	(89.6)	(68.8)	(18.8)	(2.1)	48
Religion					
Muslim	94.8	65.4	22.9	6.4	327
Caste/tribe#					
Scheduled tribe	94.8	65.5	22.9	6.4	328
Standard of living index					
Medium	96.7	59.3	28.5	8.9	123
High	93.6	69.1	19.6	4.9	204
Total	94.8	65.7	22.8	6.4	329

Note: Haemoglobin level between 10.0 - 11.9 g/dl is mild anaemia, 8.0 - 9.9 g/dl is moderate anaemia and below 8.0 g/dl is severe anaemia. [1] Includes currently married women age 15-19 years who were not pregnant at the time of survey. @ Literate adolescent with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. Total includes 2 missing cases of religion that were not shown separately. ( ) Based on less than 50 unweighted cases.

4.35 PONDICHERRY

4.35.1 Weight for Age of Children

In Pondicherry, weight was measured for 85 percent of children under 6 years of age in sampled households. On the whole, data on weights are available for nearly two thousands children in the state. Table 4.35.1 shows the percentage of children under 6 years of age classified as undernourished, as measured by weight for age index by some selected background characteristics. In the following discussion, children whose weight in SD unit (Z score) is less than –3 would be referred to as 'severely underweight' and those with weight in SD unit less than –2 would be referred to simply as 'underweight'. Less than one-tenth (8 percent) of the children in Pondicherry are severely underweight and more than one-fourth (27 percent) of the children are underweight. The proportion of undernourished children increases rapidly with the child's age upto 12-23 months and shows a decrease thereafter. More than one-tenth (13 percent) of the children in the age group 12-23 months are severely underweight whereas nearly one-third (31 percent) of the children in the same age group are underweight. By age 48-71 months the corresponding figures for severely underweight and underweight children are 6 and 27 percent, respectively.

Birth order of the child can also influence the nutritional status of the child. The second round of the RCH survey reveals that young children in families with 2-3 siblings are most likely to be underweight. Whereas 8 and 27 percent of children of first birth order are severely underweight and underweight respectively, the corresponding figures among children of birth order 2-3 are 9 and 27 percent, respectively. The observed sex differential both in severe underweight and underweight children is marginal. The extent of underweight children, both severe underweight and underweight, is higher in urban areas compared to that in rural areas. While around 10 and 27 percent children in urban areas are severely underweight and underweight, the corresponding figures for rural areas are 5 and 27 percent respectively.

Children's nutritional status is also expected to be influenced by mother's educational attainment. Children whose mothers are non-literate are more likely to be severely underweight as compared to children whose mothers have ten or more years of schooling. Similarly, in case of underweight children, children of non-literate mothers were more likely to be underweight. Their percentage is 36 among children of non-literate mothers while it is 24 percent among children of mothers with ten or more years of schooling.

The results of the RCH survey show that Hindu children tend to be marginally more underweight than Muslim children. The percentage of underweight children among Hindus and Muslim is respectively 27 and 25 percent. Children from scheduled castes have the highest percentage of both severely underweight and underweight cases (8 and 30 percent, respectively). Surprisingly, household's standard of living index (SLI) do not show sign of association with the malnourishment of children as reflected through weight for age anthropometric measure.

Table 4.35.1 WEIGHT FOR AGE OF CHILDREN

Percentage of children (age 0-71 months) classified as undernourished by weight for age anthropometric measure of nutritional status according to some selected background characteristics, Pondicherry, 2002-04

Background characteristic	Weight for age		Weighted number of children
	Percentage Below – 3 SD	Percentage Below – 2 SD[1]	
Age of child (in months)			
0-5	3.2	9.5	129
6-11	7.2	23.9	180
12-23	12.7	31.0	278
24-47	9.5	28.8	630
48-71	6.1	27.4	630
Birth order			
1	7.7	27.0	789
2-3	9.1	27.1	884
4-5	3.4	28.0	55
Mother's not interviewed	7.0	20.8	112
Sex of the child			
Male	8.1	29.0	938
Female	8.3	24.6	908
Residence			
Rural	5.0	26.6	630
Urban	9.8	26.9	1,216
Mother's education			
Non-literate	12.0	35.9	231
0-9@years	7.5	28.0	746
10 years & above	7.9	23.8	757
Mother's not interviewed	7.0	20.7	111
Religion			
Hindu	8.4	27.2	1,597
Muslim	6.0	25.0	154
Other	7.7	22.9	94
Caste/tribe#			
Scheduled caste	7.7	29.5	393
Other backward class	7.9	25.6	1,419
Standard of living index			
Low	7.1	25.1	334
Medium	10.2	32.7	515
High	7.5	24.4	996
Total	8.2	26.8	1,846

Note: This index is expressed in standard deviation units (SD) from the median of the International Reference Population. [1]Includes children who are below – 3 SD from the International Reference Population median. Total includes 5 children of birth order 6+ that were not shown separately. @ Literate mothers with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases.

Less than one-tenth (7 percent) of the children belonging to households of low standard of living are severely underweight and around one-fourth of the children in the same category are underweight. Whereas the corresponding figures for children belonging to medium standard of living households are 10 and 23 percent, respectively.

Of the 4 districts in the state, in 2 districts the percentage of underweight children in less than 30, in one district their percentage is between 30 and 50 and in one district their percentage is more than 50. South-western part of the state shows high prevalence of underweight children.

4.35.2 Anaemia among Children, Adolescent Girls, and Pregnant Women

In Pondicherry, haemoglobin level was measured for 75 percent of children under 6 years of age in sampled households. On the whole, the data on haemoglobin level are available for over one thousand children in the state. Table 4.35.2 shows the percent of children aged 0-71 months classified by the degree of anaemia and by selected background characteristics. Overall, 98 percent of the children have some level of anaemia, with 63 percent who are mildly anaemic, 33 percent who are moderately anaemic and 2 percent who are severely anaemic. Certain background characteristics of children show strong association with the level of anaemia. Some of them are: children aged 6-11 months (100 percent), children of birth order, 2-3 (99 percent), female children (98 percent), children who are normal weight (98 percent), children from urban areas (48 percent), children of non-literate mothers (99 percent), Christian children (100 percent), children of schedule castes (99 percent) and children belonging to households characterized by low standard of living (100 percent). But even in the socio-economic groups with the lowest level of anaemia, over four-fifth of children are anaemic. On the other hand, in no socio-economic group the prevalence of severe anaemia is more than three percent.

Of the 4 districts in the state, in 3 districts the percentage of children with severe or moderate anaemia is in less than 35, in one district their percentage is between 35 and 50. Districts with moderate prevalence of anaemia among children are situated mainly in western part of the state.

Data on anaemia levels are available for more than one thousand adolescent girls aged 10-19 years who constituted 74 percent of the sample. Table 4.35.3 shows anaemia levels for adolescent girls by selected background characteristics. In Pondicherry, 99 percent of adolescent girls have any anaemia. Nineteen percent of them are mildly anaemic, 66 percent are moderately anaemic and 14 percent are having severe anaemia. It has been found from the survey results that except for any anaemia and severe anaemia, the percentage of girls in the remaining two categories of anaemia increases with the increase in age from 10-14 to 15-19 years. The incidence of any anaemia is higher (94 percent) among adolescent girls who are currently married compared to that among their unmarried counterpart (93 percent). The occurrence of mild anaemia is found to be higher in urban areas than in rural areas. The prevalence of anaemia does vary much with the educational attainment of girls. The level of anaemia is higher among Hindu adolescent girls (100 percent). Adolescent girls from households with low standard of living are slightly more likely to be anaemic.

Of the 4 districts in the state, in one district the percentage of adolescent girls with severe or moderate anaemia is in less than 50, in one district their percentage is between - 50 and 75, and in 2 districts their percentage is more than 75. Districts with high prevalence of anaemia among adolescent girls are situated mainly in western part of the state.

Haemoglobin levels were measured for nearly 200 pregnant women aged 15-44 years who constituted 82 percent of the sample. Table 4.35.4 shows the anaemia status among pregnant women according some selected background characteristics. Around 95 percent of the pregnant women in Pondicherry are suffering from some anaemia. Among pregnant women, 75 percent have mild anaemia and 17 percent who have moderate anaemia and 4 percent who have severe anaemia. Thus, although levels of any anaemia among pregnant women & adolescent girls are about the same, the prevalence of severe anaemia is substantially higher in adolescent girls (14 percent) than in pregnant women (4 percent). This may be because more stringent cut-off level for severe anaemia has been used in case of adolescent girls (8 g/dl) than in case of pregnant women (5 g/dl). Table 4.35.4 clearly shows that percentage of pregnant women with any anaemia rises steadily with the increase in the age of the pregnant women from 93 percent for the age group 20-24 to 97 percent in the age group 25-29. The women, whether from rural or urban areas, are equally likely to experience any anaemia. The prevalence of anaemia is found to be strong regarding educational attainment of the pregnant women. Pregnant women among scheduled castes are more prone to be anaemic (98 percent) than the other backward class. Surprisingly, standard of living is not negatively associated with the anaemia status of the pregnant women. Around 97 percent pregnant women belonging to poor families are anaemic compared to 98 percent among women belonging to households with higher standard of living.

Table 4.35.2 ANAEMIA AMONG CHILDREN

Percentage of children (age 0-71 months) classified as having iron-deficiency anaemia by degree of anaemia and by selected background characteristics, Pondicherry, 2002-04

Background characteristic	Parentage of children with any anaemia	Percentage of children with			Weighted number of children
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age of child (in months)					
0-5	98.7	51.2	42.2	5.4	74
6-11	99.6	40.3	51.3	8.0	149
12-23	98.2	48.2	47.3	2.7	245
24-47	97.7	64.7	30.5	2.5	569
48-71	97.5	73.5	23.9	0.1	581
Birth order					
1	97.6	61.6	33.9	2.1	696
2-3	98.5	63.3	32.4	2.7	775
4-5	(93.8)	(71.9)	(21.9)	(0.0)	47
Mother's not interviewed	95.9	63.5	30.6	1.8	97
Sex of the child					
Male	97.7	61.2	34.0	2.4	813
Female	98.2	63.8	32.2	2.2	805
Weight for age of children					
Normal	98.3	61.4	34.1	2.7	1,119
Below – 2 SD[1]	97.2	64.9	31.0	1.3	500
Below – 3 SD	94.3	66.2	27.5	0.5	210
Residence					
Rural	98.7	64.7	31.7	2.4	553
Urban	97.5	61.4	33.9	2.3	1,066
Mother's education					
Non-literate	98.8	62.2	35.2	1.5	196
0-9@years	98.5	61.6	34.4	2.5	670
10 years & above	97.4	63.3	31.7	2.4	657
Mother's not interviewed	95.9	63.5	30.5	1.8	96
Religion					
Hindu	98.1	60.7	34.9	2.6	1,400
Muslim	94.5	79.7	14.4	0.4	133
Christian	100.0	69.3	30.7	0.0	78
Caste/tribe#					
Scheduled caste	98.9	57.0	41.8	0.2	343
Other backward class	97.9	63.9	31.1	2.9	1,248
Standard of living index					
Low	99.2	57.2	39.0	2.9	283
Medium	98.0	61.0	33.5	3.4	452
High	97.5	64.9	31.1	1.5	884
Total	97.9	62.5	33.1	2.3	1,619

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. [1] Includes children who are below – 3 SD from the International Reference median. Total includes 54, 104, 10 cases with missing information on birth order, sex of child, mother's education respectively and 4 cases in standard of living index were not shown separately. @ Literate mothers with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases ( ) Based on less than 50 unweighted cases. Total includes 4 cases in Birth order six or more, 8 cases of 'other religions' 5 & 20 cases of other backward caste & other respectively that were not shown separately.

Table 4.35.3 ANAEMIA AMONG ADOLESCENT GIRLS

Percentage of adolescent girls[1] (age 10-19 years) classified as having iron-deficiency anaemia by degree of anaemia and by selected background characteristics, Pondicherry, 2002-04

Background characteristic	Parentage of adolescent with any anaemia	Percentage of adolescent with			Number of adolescent girls
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
10-14	99.5	18.5	65.0	16.1	757
15-19	99.1	19.9	68.0	11.1	652
Marital status					
Currently married	(93.9)	(45.5)	(36.4)	(12.1)	37
Currently not married	99.3	19.3	66.2	13.9	1,372
Residence					
Rural	99.4	14.4	71.2	13.8	487
Urban	99.3	21.7	63.8	13.8	922
Education					
Non-literate	(98.1)	(21.2)	(46.2)	(30.8	29
0-9@years	99.2	18.4	66.6	14.2	933
10 years & above	99.5	21.0	65.6	12.9	447
Religion					
Hindu	99.5	19.3	66.0	14.2	1,208
Muslim	98.0	22.1	60.9	15.0	126
Christian	99.0	13.7	78.9	6.4	67
Caste/tribe#					
Scheduled caste	99.6	14.7	71.2	13.8	383
Other backward class	99.3	19.9	65.6	13.8	995
Standard of living index					
Low	100.0	15.4	67.0	17.6	221
Medium	98.7	21.2	62.5	15.1	436
High	99.5	19.1	68.5	11.9	752
Total	99.3	19.2	66.4	13.8	1,409

Note: Haemoglobin level between 10.0 - 11.9 g/dl is mild anaemia, 8.0 - 9.9 g/dl is moderate anaemia and below 8.0 g/dl is severe anaemia. [1] Includes currently married women age 15-19 years who were not pregnant at the time of survey. @ Literate adolescent with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. Total includes 9 cases in other religions 7,20 & 4 cases in ST, OBC and other castes that were not shown separately.

Table 4.35.4 ANAEMIA AMONG PREGNANT WOMEN

Percentage of pregnant women (age 15-44 years) classified as having iron-deficiency anaemia by degree of anaemia and by selected background characteristics, Pondicherry, 2002-04

Background characteristic	Parentage of pregnant women with any anaemia	Percentage of pregnant women with			Number of pregnant women
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
20-24	92.9	69.3	18.0	5.6	106
25-29	(96.6)	(77.6)	(17.2)	(1.7)	44
Residence					
Rural	94.9	68.8	19.7	6.4	55
Urban	95.1	77.1	15.7	2.3	121
Education					
Non-literate	(100.0)	(66.7)	(20.0)	(13.3)	25
0-9@years	93.1	67.5	24.9	0.7	58
10 years & above	94.9	81.8	12.7	0.4	94
Religion					
Hindu	95.6	73.7	17.8	4.1	155
Caste/tribe#					
Scheduled caste	(97.5)	(65.0)	(30.0)	(2.5)	46
Other backward class	95.6	79.1	11.8	4.7	127
Standard of living index					
Low	(96.6)	(55.2)	(34.5)	(6.9)	28
Medium	92.2	75.2	10.9	6.1	52
High	98.0	84.4	13.6	0.0	97
Total	95.0	74.5	16.9	3.6	177

Note: Haemoglobin level between 8.0 - 10.9 g/dl is mild anaemia, 5.0 - 7.9 g/dl is moderate anaemia and below 5.0 g/dl is severe anaemia. @ Literate women with no years of schooling are also included. # Total of the group doesn't add to total cases shown in the last row due to 'don't know' and missing cases. Total includes 17 cases in age group category 40-44, 1 case of other religions that were not shown separately. One missing case in education that was not shown separately. ( ) Based on less than 50 unweighted cases.

APPENDIX A
District-wise Indicators of Nutritional Status

State/ District	Weight for age		Anaemia among Children			Anaemia among Adolescent			Anaemia among Pregnant Women		
	-3SD[1]	-2SD[2]	Mild	Moderate[3]	Severe	Mild	Moderate[4]	Severe	Mild	Moderate	Severe
India	**19.4**	**49.2**	**96.3**	**49.2**	**44.0**	**21.9**	**48.7**	**27.2**	**50.7**	**42.5**	**3.1**
Andhra Pradesh	**17.3**	**42.3**	**55.0**	**38.7**	**3.3**	**27.7**	**46.9**	**23.6**	**57.8**	**40.2**	**2.2**
Adilabad	28.3	53.2	53.8	39.6	4.4	21.4	45.3	31.3	47.8	34.8	4.3
Anantapur	15.6	47.6	59.8	35.1	1.3	26.3	52.9	20.1	50.0	46.0	2.0
Chittoor	5.5	24.6	70.6	23.4	1.1	52.4	31.0	13.9	59.0	30.8	0.0
Cuddapah	7.2	34.8	55.4	40.4	2.1	17.5	60.6	21.5	54.3	42.9	2.9
East Godavari	16.5	47.1	53.2	39.1	7.1	16.3	60.8	22.5	66.7	33.3	0.0
Guntur	49.4	64.3	51.4	42.4	4.2	30.4	42.6	27.0	43.8	50.0	6.3
Hyderabad	15.7	34.1	67.9	22.3	2.1	42.5	30.1	21.0	63.6	18.2	0.0
Karimnagar	23.0	48.4	39.2	50.7	8.1	23.4	37.8	38.8	42.9	50.0	0.0
Khammam	16.0	38.8	51.9	44.5	2.8	13.2	65.1	21.3	52.9	44.1	2.9
Krishna	10.7	37.7	48.8	46.3	2.5	10.0	53.6	35.0	52.5	42.5	2.5
Kurnool	15.3	32.8	52.9	40.4	2.3	41.1	34.6	19.7	53.8	33.3	5.1
Mahbubnagar	23.7	53.0	63.4	30.8	0.4	41.9	35.6	17.6	93.3	6.7	0.0
Medak	14.4	41.5	63.4	34.0	1.6	30.9	51.2	15.0	66.0	30.0	2.0
Nalgonda	13.2	40.5	50.2	47.7	1.8	14.2	58.0	26.9	58.6	37.9	3.4
Nellore	14.8	39.9	49.5	45.7	3.2	32.1	37.9	28.6	57.1	33.3	9.5
Nizamabad	17.7	49.6	48.5	40.3	7.6	24.6	60.6	13.6	56.1	43.9	0.0
Prakasam	12.5	31.3	67.6	27.6	1.8	20.5	52.8	25.5	71.4	23.8	4.8
Rangareddi	19.6	40.2	53.8	35.1	8.7	36.7	42.8	20.1	51.6	45.2	0.0
Srikakulam	18.8	46.5	43.3	45.6	3.8	22.1	41.7	31.9	33.3	53.3	6.7
Visakhapatnam	20.7	46.3	55.2	39.2	0.0	39.3	41.7	19.0	60.0	40.0	0.0
Vizianagaram	16.2	44.6	39.0	57.1	2.7	13.1	55.6	31.4	47.4	52.6	0.0
Warangal	11.6	40.4	61.6	33.8	1.5	40.3	38.2	20.2	78.6	14.3	0.0
West Godavari	10.7	37.2	53.3	41.8	1.8	29.3	46.4	22.1	57.1	42.9	0.0

Note: [1] This index is expressed in standard deviation units (SD) from the median of the International Reference Population. [2] Includes children who are below –3 SD from the International Reference Population median. [3] Children aged 0-71 months. [4] Adolescent girls 10-19 years including currently married women aged 15-19 years who were not pregnant at the time of survey. * Based on districts surveyed in Phase I of DLHS-RCH (2002-04)

State/ District	Weight for age		Anaemia among Children			Anaemia among Adolescent			Anaemia among Pregnant Women		
	-3SD[1]	-2SD[2]	Mild	Moderate[3]	Severe	Mild	Moderate[4]	Severe	Mild	Moderate	Severe
Arunachal Pradesh	**2.9**	**20.3**	**25.6**	**27.9**	**1.4**	**21.9**	**46.1**	**10.1**	**26.4**	**4.2**	**2.6**
Dibang Valley	1.4	13.3	37.8	18.1	0.6	23.7	50.8	1.7	21.7	13.0	4.3
East Kameng	2.4	14.3	24.5	14.9	0.6	31.1	38.6	15.2	24.1	3.4	0.0
Lohit	3.4	22.3	28.1	32.1	2.2	17.7	53.1	5.3	26.7	6.7	0.0
Tawang	3.1	34.6	32.2	23.7	1.0	25.5	33.3	8.8	20.0	0.0	0.0
Tirap	6.1	28.9	19.9	28.4	3.0	15.9	43.9	16.6	25.0	0.0	2.5
Upper Subansiri	1.6	10.2	21.8	39.1	0.0	16.8	49.0	14.8	24.0	8.0	4.0
West Siang	0.7	16.4	22.6	36.4	0.0	27.1	46.6	7.7	34.4	3.1	6.3
Assam	**14.9**	**32.2**	**45.7**	**42.9**	**7.1**	**15.7**	**40.5**	**40.3**	**30.7**	**58.6**	**7.8**
Bongaigaon	23.3	39.1	58.8	29.8	1.8	23.3	42.2	31.0	50.0	37.5	0.0
Darrang	17.9	31.4	49.5	46.9	1.0	11.9	41.2	46.9	25.0	60.0	5.0
Dhubri	16.3	35.5	65.0	24.2	0.0	13.9	60.8	21.5	75.0	25.0	0.0
Golaghat	12.7	36.6	42.6	51.1	4.3	5.8	53.8	40.4	0.0	100.0	0.0
Jorhat	5.3	16.2	28.2	65.0	6.2	7.4	39.6	52.3	35.3	58.8	5.9
Kamrup	3.6	16.5	25.5	45.9	27.4	5.1	38.2	56.7	11.8	76.5	11.8
Karimganj	26.7	56.4	57.6	37.8	2.5	23.0	51.9	24.0	50.0	50.0	0.0
Lakhimpur	12.5	27.5	44.0	35.3	0.9	33.3	26.1	21.7	50.0	25.0	0.0
Nagaon	22.5	46.6	49.2	45.6	2.6	21.8	36.8	33.8	33.3	55.6	11.1
North Cachar Hills	5.4	19.0	63.0	21.1	0.0	31.7	44.8	19.1	72.7	15.2	0.0
Sibsagar	6.9	15.8	17.6	47.1	35.3	1.7	11.9	86.4	33.3	66.7	0.0
Tinsukia	11.1	20.9	45.5	46.8	3.9	21.5	31.1	44.4	0.0	75.0	25.0

Note: [1] This index is expressed in standard deviation units (SD) from the median of the International Reference Population. [2] Includes children who are below –3 SD from the International Reference Population median. [3] Children aged 0-71 months. [4] Adolescent girls 10-19 years including currently married women aged 15-19 years who were not pregnant at the time of survey. * Based on districts surveyed in Phase I of DLHS-RCH (2002-04)

State/ District	Weight for age		Anaemia among Children			Anaemia among Adolescent			Anaemia among Pregnant Women		
	-3SD[1]	-2SD[2]	Mild	Moderate[3]	Severe	Mild	Moderate[4]	Severe	Mild	Moderate	Severe
Bihar	**23.5**	**54.6**	**48.5**	**46.6**	**2.5**	**19.1**	**52.5**	**27.6**	**54.7**	**40.2**	**2.2**
Araria	33.3	62.6	70.6	21.1	0.0	46.7	43.4	8.8	77.8	13.0	0.0
Aurangabad	23.5	60.0	58.1	36.2	0.5	33.8	45.3	19.8	68.8	25.0	0.0
Banka	17.7	44.3	46.7	50.3	2.5	13.8	66.8	18.8	56.9	37.3	0.0
Begusarai	20.2	48.5	71.0	22.5	0.0	40.5	49.3	9.3	83.7	14.0	0.0
Bhagalpur	22.6	55.6	49.8	47.3	1.3	24.4	58.2	17.0	50.9	45.3	1.9
Bhojpur	18.5	50.9	64.0	31.2	1.3	28.5	59.0	11.0	56.1	31.7	7.3
Buxar	21.6	56.8	53.3	42.6	3.1	24.8	61.3	12.6	56.0	44.0	0.0
Darbhanga	27.9	58.0	30.0	65.5	4.2	4.0	59.3	36.8	37.9	50.0	12.1
Gaya	25.1	59.2	60.1	36.1	0.0	27.3	43.5	27.7	63.2	34.2	0.0
Gopalganj	22.5	57.1	40.7	57.6	1.6	7.1	61.3	31.4	48.3	49.4	0.0
Jamui	21.5	55.4	43.0	53.9	3.0	7.9	68.1	23.6	45.6	52.2	2.2
Jehanabad	29.9	59.5	45.7	52.6	0.5	13.2	45.2	40.6	53.2	40.4	0.0
Kaimur (Bhabua)	26.3	58.6	55.9	41.3	1.6	23.1	65.7	10.4	61.7	35.0	1.7
Katihar	21.8	53.2	65.3	22.3	5.8	32.5	46.0	21.3	63.2	27.6	1.1
Khagaria	26.7	56.2	52.4	44.2	0.3	35.4	45.1	19.4	65.6	23.0	0.0
Kishanganj	22.3	52.5	61.8	31.7	0.0	26.9	50.2	21.6	60.2	32.7	0.0
Lakhisarai	19.8	49.0	39.1	58.9	1.8	9.2	65.4	25.4	42.4	54.2	1.7
Madhepura	40.7	71.4	61.1	34.4	0.0	28.0	53.2	17.7	55.7	41.0	0.0
Madhubani	27.8	62.9	12.2	82.0	5.8	0.0	24.6	75.4	13.3	80.0	6.7
Munger	21.2	51.1	44.9	52.5	2.4	5.3	62.2	32.5	39.7	60.3	0.0
Muzaffarpur	22.4	50.8	8.7	63.8	27.5	0.0	19.0	81.0	12.5	62.5	25.0
Nalanda	24.2	50.4	54.3	41.7	2.2	18.4	62.7	18.1	68.3	30.2	0.0
Nawada	20.5	50.2	49.0	48.8	0.2	22.3	53.1	22.0	54.7	41.5	1.9
Pashchim Champaran	26.6	59.6	19.3	71.2	8.6	7.5	33.3	59.1	34.6	65.4	0.0

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State/ District	Weight for age		Anaemia among Children			Anaemia among Adolescent			Anaemia among Pregnant Women		
	-3SD[1]	-2SD[2]	Mild	Moderate[3]	Severe	Mild	Moderate[4]	Severe	Mild	Moderate	Severe
Patna	18.4	45.4	55.3	38.5	0.6	23.0	46.5	28.3	65.0	30.0	0.0
Purba Champaran	22.7	54.3	17.1	73.7	9.2	2.1	34.0	63.9	15.0	75.0	10.0
Purnia	25.7	54.7	35.9	61.5	2.6	4.4	59.5	35.9	44.6	52.3	3.1
Rohtas	20.3	47.5	57.2	39.3	2.3	24.4	63.3	11.4	67.9	25.0	1.8
Saharsa	22.4	56.1	33.7	62.4	3.8	8.6	55.9	34.5	49.2	45.9	1.6
Samastipur	26.1	57.8	18.8	70.6	8.2	9.1	27.3	63.6	12.5	87.5	0.0
Saran	15.3	45.7	48.4	47.4	3.2	20.2	54.9	23.4	59.4	37.7	1.4
Sheikhpura	12.5	37.4	44.2	52.4	2.8	13.9	64.6	20.7	52.7	41.8	3.6
Sheohar	18.2	52.0	70.0	28.1	0.2	29.7	60.5	8.1	70.4	25.9	0.0
Sitamarhi	26.2	58.7	39.6	57.9	1.8	3.4	69.3	27.0	45.7	51.9	2.5
Siwan	21.7	55.8	56.5	42.0	0.0	23.8	51.5	23.4	60.0	40.0	0.0
Supaul	28.6	58.6	43.3	54.2	1.8	5.2	56.3	38.3	48.1	49.1	2.8
Vaishali	18.7	49.8	17.6	75.9	6.5	1.2	16.3	82.6	14.3	78.6	7.1
Chhattisgarh	**19.2**	**47.4**	**37.3**	**55.5**	**4.1**	**11.0**	**39.8**	**48.3**	**36.4**	**56.1**	**5.1**
Bastar	20.8	51.1	48.0	48.7	1.0	12.0	56.3	31.7	42.6	51.9	1.9
Bilaspur	13.1	36.4	44.6	42.2	1.7	23.1	34.7	35.8	35.3	58.8	5.9
Dantewada	13.3	38.1	28.0	64.3	4.8	7.8	31.5	59.8	24.2	66.7	3.0
Dhamtari	17.2	48.5	57.2	37.0	0.2	26.2	43.6	28.6	51.9	30.8	1.9
Durg	37.9	69.0	35.2	59.0	4.5	5.9	36.7	56.6	43.2	56.8	0.0
Janjgir-Champa	7.4	25.3	37.5	50.8	6.2	14.2	39.8	45.6	41.4	48.3	3.4
Jashpur	17.7	48.0	32.6	65.3	1.2	4.4	46.3	49.3	32.6	65.2	0.0
Kanker	15.0	36.9	24.9	71.5	3.6	0.3	31.8	67.9	22.7	68.2	9.1
Kawardha	28.0	56.1	36.8	61.2	1.2	4.0	34.9	61.1	37.8	60.0	2.2
Korba	23.5	57.7	16.1	76.8	7.1	1.5	26.7	71.9	13.5	73.1	13.5

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State/ District	Weight for age		Anaemia among Children			Anaemia among Adolescent			Anaemia among Pregnant Women		
	-3SD[1]	-2SD[2]	Mild	Moderate[3]	Severe	Mild	Moderate[4]	Severe	Mild	Moderate	Severe
Koriya	6.7	23.0	32.8	38.9	5.0	30.1	23.6	42.5	27.3	50.9	7.3
Mahasamund	21.6	58.3	16.3	74.6	8.9	2.6	32.0	65.1	14.1	79.7	4.7
Raigarh	27.1	56.5	46.6	43.8	4.7	12.7	38.0	48.1	60.0	40.0	0.0
Raipur	11.3	41.1	34.0	58.7	6.2	14.1	43.4	42.4	24.3	59.5	13.5
Rajnandgaon	17.0	48.6	41.0	53.9	4.6	11.3	50.6	38.2	45.3	49.1	5.7
Surguja	17.7	45.9	45.4	52.3	2.1	5.7	44.1	50.2	45.0	51.7	3.3
Delhi	**10.8**	**35.3**	**45.6**	**48.0**	**3.8**	**18.8**	**51.6**	**28.7**	**46.5**	**47.3**	**1.3**
Central	14.2	31.5	47.7	39.1	3.3	30.3	41.8	24.0	57.7	34.6	3.8
East	6.5	28.1	42.5	51.4	3.9	11.2	48.0	40.1	37.5	50.0	0.0
New Delhi	9.0	28.7	43.6	49.2	6.7	10.2	55.9	33.9	57.1	42.9	0.0
North	7.4	33.6	51.2	31.8	4.1	35.2	37.7	22.6	60.0	25.0	0.0
North East	14.4	39.8	49.6	47.8	1.6	19.9	56.3	23.4	47.5	47.5	3.4
North West	10.2	38.7	61.4	35.1	1.8	26.2	59.3	14.5	54.5	40.9	0.0
South	9.1	34.8	42.0	52.4	5.1	14.8	51.2	33.6	39.5	53.5	2.3
South West	8.1	24.9	33.8	56.4	6.4	9.3	51.7	38.1	38.1	61.9	0.0
West	15.4	42.6	40.7	54.4	3.7	18.4	51.3	30.3	50.9	43.6	1.8
Goa	**6.5**	**30.0**	**69.8**	**24.9**	**0.2**	**47.1**	**38.7**	**10.8**	**75.0**	**18.2**	**0.0**
North Goa	4.7	23.1	70.8	29.2	0.0	49.7	36.9	13.4	71.4	23.8	0.0
South Goa	9.7	42.3	68.5	19.3	0.5	44.6	40.5	8.3	78.3	13.0	0.0
Gujurat	**15.4**	**46.0**	**39.9**	**51.7**	**5.1**	**19.0**	**40.6**	**39.0**	**44.1**	**49.2**	**5.1**
Ahmadabad	10.4	33.2	60.1	36.1	0.0	27.7	54.4	17.6	60.5	37.2	0.0
Amreli	14.1	45.0	21.0	69.4	9.2	6.1	45.0	48.9	27.9	64.7	7.4

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State/ District	Weight for age		Anaemia among Children			Anaemia among Adolescent			Anaemia among Pregnant Women		
	-3SD[1]	-2SD[2]	Mild	Moderate[3]	Severe	Mild	Moderate[4]	Severe	Mild	Moderate	Severe
Anand	11.9	46.7	25.1	68.1	6.0	8.9	34.8	56.3	26.2	64.3	9.5
Banas Kantha	20.2	52.4	56.1	38.5	0.3	26.4	48.7	21.6	80.0	17.1	0.0
Bharuch	17.7	50.4	9.5	76.2	14.3	0.9	22.9	76.3	12.5	71.4	16.1
Bhavnagar	15.7	47.3	19.7	75.0	5.2	5.2	44.7	50.1	29.6	63.0	7.4
Dohad	24.8	63.9	11.9	74.9	13.2	0.8	24.3	74.9	13.0	69.6	17.4
Gandhinagar	12.3	47.1	61.2	35.0	0.0	22.4	54.2	21.7	67.5	32.5	0.0
Jamnagar	13.1	39.9	47.0	50.2	1.9	17.5	61.1	20.5	68.8	31.3	0.0
Junagarh	12.4	43.8	56.1	41.1	0.0	26.3	43.1	28.6	56.0	40.0	0.0
Kachchh	17.7	42.0	42.7	53.8	2.7	25.1	43.4	31.5	29.0	64.5	6.5
Kheda	18.3	56.0	24.8	65.8	9.2	4.8	35.2	59.1	18.3	68.3	13.3
Mahesana	15.7	43.1	55.2	40.3	0.3	27.7	41.1	29.5	56.0	44.0	0.0
Narmada	25.6	61.1	16.8	75.0	7.4	3.1	31.7	65.2	18.2	75.0	6.8
Navsari	10.5	37.5	9.7	77.6	12.7	0.0	15.5	84.5	13.5	78.4	8.1
Panch Mahals	21.1	54.1	15.7	64.6	19.3	3.2	27.3	69.5	16.7	64.6	18.8
Patan	18.3	45.4	17.2	53.8	29.1	4.8	28.7	66.5	18.4	53.1	28.6
Porbandar	11.3	39.5	24.1	71.3	4.0	5.3	46.1	48.5	15.1	81.1	3.8
Rajkot	7.2	38.5	57.8	34.2	0.7	41.9	40.7	15.6	63.9	33.3	0.0
Sabar Kantha	18.3	51.9	40.1	58.8	0.0	10.6	42.5	46.9	40.9	59.1	0.0
Surat	10.2	38.3	57.0	28.7	0.0	44.3	36.7	12.2	61.3	32.3	0.0
Surendranagar	12.7	47.6	70.8	24.5	0.0	34.2	47.9	13.0	65.9	29.3	0.0
The Dangs	29.5	64.6	34.4	61.8	1.2	20.0	44.8	32.7	37.0	59.3	1.9
Vadodara	19.8	51.0	23.8	63.9	11.9	1.9	33.9	64.2	32.7	57.1	10.2
Valsad	24.2	54.5	6.4	84.1	9.3	0.4	17.5	82.2	7.9	86.8	5.3

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State/ District	Weight for age		Anaemia among Children			Anaemia among Adolescent			Anaemia among Pregnant Women		
	-3SD[1]	-2SD[2]	Mild	Moderate[3]	Severe	Mild	Moderate[4]	Severe	Mild	Moderate	Severe
Haryana	**13.3**	**35.6**	**38.6**	**54.1**	**4.6**	**13.2**	**46.0**	**40.2**	**40.5**	**52.8**	**3.3**
Ambala	6.6	20.5	39.1	56.8	3.2	6.9	41.9	51.0	54.9	45.1	0.0
Bhiwani	10.7	39.4	46.0	47.2	3.1	25.9	49.7	24.2	43.2	50.0	0.0
Faridabad	23.0	50.4	26.0	66.2	7.4	7.6	43.7	48.6	20.0	70.0	6.7
Fatehabad	8.7	21.4	44.4	44.6	5.3	13.1	41.2	45.3	64.0	26.0	2.0
Gurgaon	19.4	47.3	28.7	63.8	7.1	6.4	49.4	44.3	35.9	64.1	0.0
Hisar	7.4	20.9	39.5	50.7	5.5	9.5	39.3	51.2	36.7	60.0	0.0
Jhajjar	11.2	27.4	43.2	39.0	2.9	13.1	42.3	38.8	38.9	40.7	3.7
Jind	10.9	37.2	43.4	50.4	4.3	22.9	48.9	27.7	55.6	38.9	2.8
Kaithal	15.8	42.8	29.7	64.7	5.2	13.1	50.0	36.9	25.0	72.2	2.8
Karnal	14.5	30.2	43.8	51.4	2.5	9.0	47.3	42.0	42.0	52.0	6.0
Kurukshetra	6.7	14.9	49.1	46.0	1.7	11.1	44.3	44.3	50.0	41.3	2.2
Mahendragarh	10.3	37.9	46.5	47.4	4.3	17.1	54.9	27.2	52.6	47.4	0.0
Panchkula	15.3	42.5	54.4	33.6	1.8	35.2	43.3	18.1	55.6	18.5	0.0
Panipat	12.3	42.6	34.8	58.2	6.2	13.7	53.6	32.7	26.3	63.2	10.5
Rewari	8.8	30.2	35.1	58.8	4.9	7.8	31.2	60.0	32.2	64.4	1.7
Rohtak	10.1	32.4	40.6	51.4	4.5	8.6	39.7	51.5	31.0	61.9	4.8
Sirsa	13.6	38.8	46.9	45.8	4.4	24.0	48.2	27.6	52.9	41.2	5.9
Sonipat	12.6	25.0	39.9	55.0	2.3	6.0	47.6	46.2	48.4	43.8	6.3
Yamunanagar	14.2	40.7	36.4	58.3	3.7	16.1	51.6	31.8	30.0	63.3	6.7
Himachal Pradesh	**12.4**	**36.4**	**47.2**	**47.7**	**2.5**	**20.7**	**47.4**	**31.0**	**49.2**	**44.0**	**4.0**
Bilaspur	4.5	22.8	59.4	35.9	1.6	34.4	49.2	14.8	64.7	26.5	5.9
Chamba	15.8	37.2	40.9	56.1	2.7	5.4	55.4	39.2	44.0	52.0	4.0
Hamirpur	14.5	45.6	57.2	41.7	0.4	24.9	56.8	17.9	59.0	35.9	0.0

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	-3SD[1]	-2SD[2]	Mild	Moderate[3]	Severe	Mild	Moderate[4]	Severe	Mild	Moderate	Severe
Kangra	15.0	47.3	30.2	67.0	2.7	1.2	44.6	54.2	26.5	64.7	8.8
Kinnaur	36.9	59.6	52.5	44.4	1.7	20.3	52.7	25.0	43.5	56.5	0.0
Kullu	9.9	26.5	70.0	10.7	0.7	64.8	20.5	9.8	88.9	5.6	0.0
Lahul & Spiti	15.1	39.9	57.5	39.5	1.5	37.1	48.6	13.3	51.5	42.4	6.1
Mandi	12.6	36.1	60.2	33.2	3.5	34.6	45.5	19.4	59.4	28.1	3.1
Shimla	10.9	27.6	59.0	35.6	0.5	34.6	42.3	19.9	66.7	33.3	0.0
Sirmaur	7.5	30.2	34.0	59.0	6.0	18.8	50.0	30.8	22.6	71.0	3.2
Solan	7.6	30.0	48.7	47.1	1.6	15.7	58.3	26.0	56.0	36.0	4.0
Una	16.3	40.2	40.2	56.2	3.2	14.8	53.1	31.8	47.2	50.0	2.8
Jammu and Kashmir	**7.0**	**22.3**	**45.1**	**7.5**	**0.0**	**39.2**	**19.4**	**6.5**	**48.1**	**9.3**	**0.0**
Anantanag	6.2	18.4	30.3	1.8	0.0	25.9	8.9	2.3	30.0	0.0	0.0
Badgam	14.0	27.6	44.7	0.5	0.0	72.2	7.5	1.1	42.9	0.0	0.0
Baramula	4.3	15.4	61.8	18.4	0.0	30.5	41.7	15.1	60.0	30.0	0.0
Kargil	0.0	2.4	49.3	38.7	1.3	22.3	39.1	31.4	70.0	20.0	0.0
Kupwara	8.6	32.5	42.4	0.8	0.0	44.2	12.2	2.7	50.0	0.0	0.0
Leh (Ladakh)	0.0	1.8	43.5	32.6	0.0	31.9	36.3	16.7	60.0	40.0	0.0
Pulwama	7.8	34.1	42.3	0.8	0.0	44.4	12.4	2.6	56.3	0.0	0.0
Jharkhand	**20.7**	**52.2**	**55.6**	**40.9**	**1.2**	**19.1**	**56.1**	**24.2**	**55.8**	**40.7**	**1.3**
Bokaro	12.2	45.4	56.4	38.6	2.4	18.3	61.5	18.3	57.8	40.0	0.0
Chatra	24.0	54.5	52.5	45.2	1.9	9.5	66.1	24.5	48.5	51.5	0.0
Deoghar	22.1	48.4	55.5	37.7	0.0	25.0	53.8	20.2	75.9	24.1	0.0
Dhanbad	10.8	50.6	49.2	48.6	2.0	10.9	64.8	24.2	40.0	57.1	0.0
Dumka	27.5	62.0	41.0	56.7	0.2	10.5	40.7	48.8	48.8	51.2	0.0

Note: [1] This index is expressed in standard deviation units (SD) from the median of the International Reference Population. [2] Includes children who are below –3 SD from the International Reference Population median. [3] Children aged 0-71 months. [4] Adolescent girls 10-19 years including currently married women aged 15-19 years who were not pregnant at the time of survey. * Based on districts surveyed in Phase I of DLHS-RCH (2002-04)

State/ District	Weight for age		Anaemia among Children			Anaemia among Adolescent			Anaemia among Pregnant Women		
	-3SD[1]	-2SD[2]	Mild	Moderate[3]	Severe	Mild	Moderate[4]	Severe	Mild	Moderate	Severe
Garhwa	18.4	50.5	60.3	35.8	1.1	38.6	48.8	9.9	79.5	11.5	0.0
Giridih	32.0	62.9	44.7	53.2	1.6	4.4	61.6	34.1	42.3	49.3	7.0
Godda	20.2	50.4	86.4	11.4	0.0	26.0	63.0	11.0	87.5	6.8	0.0
Gumla	15.2	50.3	51.4	44.1	0.0	13.8	60.0	26.2	57.1	39.3	0.0
Hazaribagh	21.2	49.9	61.8	36.8	0.6	16.6	63.5	19.0	61.3	37.1	1.6
Kodarma	25.9	61.6	36.6	60.0	3.0	6.8	61.4	31.8	41.5	53.8	4.6
Lohardaga	16.6	48.0	71.9	25.5	0.0	21.8	49.1	29.1	67.7	32.3	0.0
Pakaur	15.9	50.7	54.7	43.8	0.9	10.5	64.7	24.2	46.3	47.8	4.5
Palamu	21.6	50.7	47.4	47.4	4.8	13.3	53.7	33.0	54.0	39.7	4.8
Pashchimi Singhbhum	24.8	55.6	54.8	41.4	0.7	32.2	50.2	15.9	44.7	55.3	0.0
Purbi Singhbhum	14.3	44.4	55.5	37.6	0.0	30.6	46.9	21.8	51.4	45.9	0.0
Ranchi	16.6	45.9	66.2	31.1	0.0	25.3	52.2	22.4	57.9	36.8	0.0
Sahibganj	35.3	62.7	69.1	25.0	0.0	29.9	50.5	19.6	77.2	21.1	0.0
Karnataka	**14.6**	**44.8**	**58.3**	**34.0**	**3.1**	**37.4**	**44.1**	**14.8**	**61.5**	**29.5**	**0.9**
Bagalkot	25.4	62.4	42.8	55.3	1.9	20.2	57.7	18.0	45.3	49.1	0.0
Bangalore	6.4	26.4	55.8	20.9	4.7	63.9	26.4	5.6	50.0	37.5	0.0
Bangalore Rural	10.8	42.9	66.7	20.0	3.8	55.6	24.1	10.3	70.3	21.6	2.7
Belgaum	11.2	40.9	72.7	22.7	0.7	57.6	26.7	10.3	78.6	17.9	0.0
Bellary	13.0	47.4	35.8	61.3	2.5	12.8	60.2	25.2	36.9	58.5	0.0
Bidar	13.4	49.7	70.7	26.3	0.3	58.5	25.4	8.7	78.2	16.4	0.0
Bijapur	28.3	59.1	64.3	35.3	0.0	24.1	57.7	16.8	71.1	21.1	0.0
Chamarajanagar	15.4	41.8	75.7	23.0	0.0	28.9	59.6	9.3	63.2	31.6	0.0
Chikmagalur	10.8	44.3	59.8	24.2	6.8	48.4	28.1	17.2	70.0	30.0	0.0
Chitradurga	19.7	53.5	65.7	34.3	0.0	25.4	59.1	13.3	73.3	23.3	0.0

Note: [1] This index is expressed in standard deviation units (SD) from the median of the International Reference Population. [2] Includes children who are below –3 SD from the International Reference Population median. [3] Children aged 0-71 months. [4] Adolescent girls 10-19 years including currently married women aged 15-19 years who were not pregnant at the time of survey. * Based on districts surveyed in Phase I of DLHS-RCH (2002-04)

State/ District	Weight for age		Anaemia among Children			Anaemia among Adolescent			Anaemia among Pregnant Women		
	-3SD[1]	-2SD[2]	Mild	Moderate[3]	Severe	Mild	Moderate[4]	Severe	Mild	Moderate	Severe
Dakshina Kannada	21.9	50.0	79.8	19.3	0.0	28.3	57.6	12.7	85.7	0.0	0.0
Davanagere	29.2	62.5	48.4	48.4	2.8	24.9	53.5	19.2	62.2	35.1	2.7
Dharwad	23.6	63.7	56.9	42.5	0.6	21.9	60.1	17.5	62.9	34.3	2.9
Gadag	17.8	54.8	51.6	47.2	0.0	22.3	58.2	18.9	57.5	40.0	0.0
Gulbarga	17.6	49.1	53.0	44.1	1.6	44.1	42.5	12.5	46.7	50.0	3.3
Hassan	8.8	42.9	57.3	28.0	0.0	49.1	28.4	15.5	50.0	33.3	0.0
Haveri	19.7	57.3	80.2	18.3	0.0	27.9	59.5	9.9	73.8	21.4	0.0
Kodagu	7.2	35.1	39.5	50.6	6.2	19.2	44.0	36.8	41.7	16.7	0.0
Kolar	13.0	45.3	55.6	29.6	3.7	35.7	39.3	17.9	0.0	100.0	0.0
Koppal	14.0	43.1	53.1	35.5	8.4	42.3	34.8	19.5	54.8	41.9	0.0
Mandya	6.9	38.6	0.0	64.7	35.3	13.3	46.7	37.8	16.7	16.7	0.0
Mysore	23.4	55.5	58.9	36.8	2.6	22.0	59.4	15.4	61.0	34.1	2.4
Raichur	8.9	25.5	43.0	50.0	6.0	34.0	43.6	20.9	47.4	47.4	5.3
Shimoga	11.0	46.8	73.8	25.2	0.0	25.2	59.0	14.3	70.3	24.3	0.0
Tumkur	7.3	32.7	53.4	37.7	3.1	45.5	33.7	13.4	69.6	21.7	0.0
Udupi	9.7	35.1	78.2	18.3	0.0	31.6	58.0	7.1	85.7	14.3	0.0
Uttara Kannada	9.5	35.3	83.5	13.0	0.0	54.1	30.6	13.3	84.6	7.7	0.0
Kerala	**9.3**	**35.8**	**79.4**	**10.2**	0.0	**58.4**	**29.8**	**2.2**	**84.6**	**5.4**	0.0
Alappuzha	5.9	30.8	84.3	4.8	0.0	78.7	9.0	1.1	87.5	6.3	0.0
Ernakulam	5.9	36.2	88.7	9.4	0.0	54.7	41.5	0.0	95.7	0.0	0.0
Idukki	5.0	24.3	70.7	2.4	0.0	65.1	3.9	0.8	68.4	0.0	0.0
Kannur	7.3	32.2	79.1	16.3	0.0	31.6	57.9	7.9	88.2	11.8	0.0
Kasaragod	13.1	35.2	78.1	5.1	0.0	75.3	8.6	4.5	77.8	7.4	0.0
Kollam	5.4	24.3	75.8	7.7	0.0	70.6	18.8	1.2	76.5	5.9	0.0

Note: [1] This index is expressed in standard deviation units (SD) from the median of the International Reference Population. [2] Includes children who are below –3 SD from the International Reference Population median. [3] Children aged 0-71 months. [4] Adolescent girls 10-19 years including currently married women aged 15-19 years who were not pregnant at the time of survey. * Based on districts surveyed in Phase I of DLHS-RCH (2002-04)

State/ District	Weight for age		Anaemia among Children			Anaemia among Adolescent			Anaemia among Pregnant Women		
	-3SD[1]	-2SD[2]	Mild	Moderate[3]	Severe	Mild	Moderate[4]	Severe	Mild	Moderate	Severe
Kottayam	10.3	36.6	82.4	16.7	0.0	35.3	64.7	0.0	75.0	25.0	0.0
Kozhikode	18.7	46.6	79.7	14.9	0.0	59.8	34.8	0.0	88.5	3.8	0.0
Malappuram	6.9	36.7	72.9	5.2	0.0	74.3	4.2	0.6	78.1	0.0	0.0
Palakkad	19.1	55.6	74.7	25.3	0.0	36.0	54.7	8.0	92.3	3.8	0.0
Pathanamthitta	9.2	33.9	86.6	9.2	0.0	44.8	48.3	2.3	87.5	0.0	0.0
Thiruvananthapuram	8.5	36.3	85.2	9.2	0.0	60.6	36.7	0.9	97.1	0.0	0.0
Thrissur	5.5	23.9	79.2	2.8	0.0	66.3	10.5	1.1	77.8	11.1	0.0
Wayanad	8.2	34.3	75.0	11.1	0.0	64.8	22.5	2.8	60.0	13.3	0.0
Madhya Pradesh	**24.1**	**55.4**	**41.8**	**50.2**	**3.8**	**20.2**	**45.1**	**33.2**	**42.2**	**51.2**	**3.4**
Balaghat	24.3	57.1	52.1	42.3	3.6	34.6	46.3	18.3	50.0	38.9	0.0
Barwani	31.7	64.7	36.8	59.6	3.3	7.8	61.2	30.7	35.5	57.9	5.3
Betul	23.2	48.9	58.2	32.8	0.5	38.2	41.9	16.9	68.0	20.0	0.0
Bhind	24.3	60.7	40.0	51.4	6.8	15.7	57.3	27.0	41.4	55.2	3.4
Bhopal	16.6	47.8	47.2	47.2	3.0	22.9	45.0	30.9	63.6	36.4	0.0
Chhatarpur	27.2	60.8	48.6	42.6	4.7	33.3	41.2	21.0	75.0	25.0	0.0
Chhindwara	22.6	54.4	51.9	42.2	0.9	35.6	43.3	20.2	35.0	65.0	0.0
Damoh	13.3	44.3	42.9	54.4	2.2	12.1	51.6	36.3	32.7	61.5	3.8
Datia	25.6	55.1	41.6	49.4	7.5	22.2	47.5	30.4	45.5	54.5	0.0
Dewas	22.8	56.9	—	—	—	—	—	—	—	—	—
Dhar	29.4	63.7	75.3	24.7	0.0	6.5	66.2	27.3	73.3	26.7	0.0
Dindori	24.7	58.8	32.5	65.6	1.7	4.5	48.6	46.9	37.7	59.7	2.6
East Nimar	28.2	64.7	—	—	—	—	—	—	—	—	—
Guna	25.9	61.0	—	—	—	—	—	—	—	—	—
Gwalior	17.5	58.1	54.3	37.7	1.8	26.1	44.0	28.3	53.3	40.0	0.0

Note: [1] This index is expressed in standard deviation units (SD) from the median of the International Reference Population. [2] Includes children who are below –3 SD from the International Reference Population median. [3] Children aged 0-71 months. [4] Adolescent girls 10-19 years including currently married women aged 15-19 years who were not pregnant at the time of survey. — Invalid/Not applicable. * Based on districts surveyed in Phase I of DLHS-RCH (2002-04)

State/ District	Weight for age		Anaemia among Children			Anaemia among Adolescent			Anaemia among Pregnant Women		
	-3SD[1]	-2SD[2]	Mild	Moderate[3]	Severe	Mild	Moderate[4]	Severe	Mild	Moderate	Severe
Harda	17.6	45.6	59.5	28.6	0.3	52.8	28.2	14.4	58.7	23.9	0.0
Hoshangabad	16.3	43.1	30.4	55.3	11.0	5.6	41.6	52.8	37.3	61.0	1.7
Indore	14.2	45.0	—	—	—	—	—	—	—	—	—
Jabalpur	19.1	41.0	20.7	69.6	9.4	1.5	32.4	66.1	14.6	72.9	12.5
Jhabua	34.1	65.5	—	—	—	—	—	—	—	—	—
Katni	27.6	57.3	18.4	74.7	7.0	2.4	28.2	69.4	17.0	76.6	6.4
Mandla	22.9	53.6	62.2	27.8	0.6	35.2	44.5	16.3	60.8	33.3	2.0
Mandsaur	26.9	60.7	29.5	57.0	12.8	8.3	53.4	38.3	19.7	65.6	14.8
Morena	18.7	46.6	25.7	71.1	2.8	3.6	36.3	59.9	30.6	68.5	0.9
Narsimhapur	27.2	58.5	40.7	49.9	2.2	39.9	42.1	15.9	52.6	39.5	0.0
Neemuch	26.6	61.6	42.4	54.8	2.3	12.2	64.1	23.7	31.8	68.2	0.0
Panna	30.7	62.7	20.7	70.6	6.5	4.3	31.4	64.3	17.5	72.5	10.0
Raisen	18.6	48.1	36.6	57.4	3.3	17.0	54.0	28.3	47.1	52.9	0.0
Rajgarh	35.0	68.3	38.9	55.2	4.1	20.1	58.3	21.4	44.9	50.0	1.3
Ratlam	28.0	67.0	25.3	58.8	14.9	11.5	34.4	54.2	19.5	58.5	22.0
Rewa	7.3	30.5	55.0	33.3	0.6	27.0	43.5	24.2	55.6	37.8	0.0
Sagar	31.0	65.5	46.0	47.4	1.9	36.8	47.0	14.4	61.7	31.9	2.1
Satna	7.1	26.5	44.0	28.6	0.5	28.6	27.9	31.3	33.3	44.4	0.0
Sehore	25.3	58.2	30.4	67.0	2.7	1.8	61.8	36.4	66.7	33.3	0.0
Seoni	16.4	44.3	49.8	39.8	3.0	26.1	48.8	22.9	31.6	52.6	10.5
Shahdol	9.9	36.9	41.3	56.3	2.1	8.3	47.9	43.4	46.0	54.0	0.0
Shajapur	31.5	62.5	34.9	61.0	3.3	18.9	60.2	20.8	40.8	55.1	2.0
Sheopur	27.6	54.9	41.3	52.1	2.8	18.9	43.1	37.2	40.0	55.0	2.5
Shivpuri	30.8	65.2	9.4	78.7	12.0	4.6	22.5	72.8	4.9	78.0	17.1
Sidhi	54.3	77.6	58.7	35.4	0.9	16.3	48.3	34.3	61.8	29.4	0.0

Note: [1] This index is expressed in standard deviation units (SD) from the median of the International Reference Population. [2] Includes children who are below –3 SD from the International Reference Population median. [3] Children aged 0-71 months. [4] Adolescent girls 10-19 years including currently married women aged 15-19 years who were not pregnant at the time of survey. — Invalid/Not applicable. * Based on districts surveyed in Phase I of DLHS-RCH (2002-04)

State/ District	Weight for age		Anaemia among Children			Anaemia among Adolescent			Anaemia among Pregnant Women		
	-3SD[1]	-2SD[2]	Mild	Moderate[3]	Severe	Mild	Moderate[4]	Severe	Mild	Moderate	Severe
Tikamgarh	26.1	54.7	42.5	50.8	2.5	20.6	43.5	35.2	41.3	50.0	3.8
Ujjain	20.9	56.7	47.3	49.3	1.6	17.3	59.0	23.8	40.4	57.4	2.1
Umaria	10.2	46.3	24.8	69.4	5.2	6.0	32.4	60.9	26.2	65.6	4.9
Vidisha	25.1	60.9	39.7	56.8	3.4	9.2	52.3	38.5	33.3	61.9	4.8
West Nimar	26.8	61.9	47.9	46.5	3.0	31.9	50.3	16.9	50.0	50.0	0.0
Maharashtra	**15.0**	**47.7**	**45.2**	**50.2**	**2.7**	**17.3**	**52.5**	**29.4**	**44.3**	**52.3**	**1.8**
Ahmadnagar	12.0	40.2	41.1	52.6	3.0	9.4	57.4	32.2	26.1	73.9	0.0
Akola	16.3	51.2	47.9	49.8	1.5	12.4	68.6	18.6	48.5	39.4	12.1
Amravati	18.9	55.9	47.7	49.1	2.0	13.9	52.2	33.6	44.1	52.9	2.9
Aurangabad	16.1	50.6	42.7	50.7	4.4	20.8	46.9	31.3	43.1	49.0	5.9
Bhandara	13.3	51.2	54.4	43.0	1.5	14.2	71.3	14.2	52.6	42.1	5.3
Bid	14.7	50.4	45.3	50.5	0.4	19.5	44.7	35.1	36.4	60.0	0.0
Buldana	19.4	58.0	29.3	65.1	4.4	9.9	44.7	44.9	27.4	71.0	1.6
Chandrapur	21.1	59.1	33.3	63.3	2.2	5.8	44.2	48.8	35.7	64.3	0.0
Dhule	20.1	52.4	40.0	55.2	4.1	8.7	66.5	24.5	37.5	58.3	4.2
Gadchiroli	27.6	61.9	32.8	67.2	0.0	1.8	50.4	47.8	37.5	62.5	0.0
Gondiya	19.6	57.3	54.4	42.6	2.4	12.8	59.1	28.2	48.6	42.9	5.7
Hingoli	21.6	58.8	50.5	47.3	1.3	20.7	64.5	14.4	52.9	45.7	1.4
Jalgaon	14.5	51.4	34.6	57.9	5.3	20.9	43.9	34.2	26.7	70.0	0.0
Jalna	18.2	55.2	43.6	53.6	2.6	13.9	67.3	18.6	43.0	53.2	3.8
Kolhapur	11.2	36.0	50.0	46.7	2.1	15.2	61.0	23.5	68.6	31.4	0.0
Latur	14.6	51.3	50.9	47.1	1.5	18.8	65.2	15.9	56.5	42.0	0.0
Mumbai	8.5	38.3	46.8	49.5	2.8	18.2	54.7	27.1	32.0	68.0	0.0
Mumbai (Suburban)	7.9	35.4	56.7	37.9	2.9	28.6	55.4	14.1	48.1	44.4	0.0

Note: [1] This index is expressed in standard deviation units (SD) from the median of the International Reference Population. [2] Includes children who are below –3 SD from the International Reference Population median. [3] Children aged 0-71 months. [4] Adolescent girls 10-19 years including currently married women aged 15-19 years who were not pregnant at the time of survey. * Based on districts surveyed in Phase I of DLHS-RCH (2002-04)

Key Indicator, DLHS-RCH, 2002-04

State/ District	Weight for age		Anaemia among Children			Anaemia among Adolescent			Anaemia among Pregnant Women		
	-3SD[1]	-2SD[2]	Mild	Moderate[3]	Severe	Mild	Moderate[4]	Severe	Mild	Moderate	Severe
Nagpur	13.5	46.2	22.1	68.4	8.4	5.3	29.3	65.3	38.5	61.5	0.0
Nanded	21.7	56.4	18.0	64.0	17.4	6.7	38.5	54.6	19.6	70.6	7.8
Nandurbar	37.3	67.4	25.1	70.8	3.9	1.9	52.0	45.9	28.8	61.5	9.6
Nashik	24.3	58.8	48.7	47.4	0.2	23.7	37.7	37.4	53.7	41.5	0.0
Osmanabad	12.4	44.5	55.6	39.9	1.4	30.2	46.5	22.4	46.7	44.4	2.2
Parbhani	20.1	57.3	48.4	48.6	1.7	18.6	64.3	16.9	43.3	55.2	1.5
Pune	7.1	34.6	42.0	54.3	1.2	16.1	52.3	31.0	45.5	54.5	0.0
Raigarh	10.0	39.4	51.8	45.7	1.6	7.7	63.1	29.1	50.0	47.6	2.4
Ratnagiri	10.0	37.0	55.2	42.8	2.1	13.0	63.7	23.0	50.0	50.0	0.0
Sangli	10.6	40.1	34.7	59.4	4.4	11.5	44.6	43.5	28.3	67.4	4.3
Satara	7.5	34.5	43.9	51.5	2.5	14.3	49.8	35.5	40.7	51.9	7.4
Sindhudurg	12.9	42.8	64.1	28.3	0.3	37.7	44.0	17.4	54.3	37.1	0.0
Solapur	15.5	48.4	46.2	51.9	1.0	19.0	60.0	20.6	54.2	43.8	0.0
Thane	13.1	48.5	53.3	43.9	0.0	23.6	47.2	27.5	52.8	47.2	0.0
Wardha	16.0	52.5	22.5	76.7	0.4	3.3	36.7	59.6	11.8	88.2	0.0
Washim	21.3	58.5	45.0	50.0	3.6	21.5	52.5	25.0	38.2	55.9	2.9
Yavatmal	21.4	60.0	58.0	39.9	1.5	17.2	65.6	15.8	66.7	28.2	5.1
Manipur	**2.3**	**12.6**	**20.1**	**23.6**	**0.8**	**26.9**	**5.9**	**0.2**	**32.7**	**23.4**	**9.0**
Chandel	1.5	8.9	17.8	15.3	0.5	19.5	4.1	0.0	25.0	25.0	0.0
Churachandpur	0.2	6.3	28.1	27.7	0.6	24.5	6.3	0.0	30.0	10.0	0.0
Senapati	3.3	15.0	18.1	20.9	1.1	24.2	6.7	0.5	15.9	6.1	2.4
Thoubal	0.2	7.9	17.4	24.6	0.9	32.5	7.0	0.0	20.8	4.2	0.0
Ukhrul	11.1	35.8	20.4	23.9	0.6	26.2	3.2	0.8	27.8	11.1	0.0

Note: [1] This index is expressed in standard deviation units (SD) from the median of the International Reference Population. [2] Includes children who are below –3 SD from the International Reference Population median. [3] Children aged 0-71 months. [4] Adolescent girls 10-19 years including currently married women aged 15-19 years who were not pregnant at the time of survey. * Based on districts surveyed in Phase I of DLHS-RCH (2002-04)

State/ District	Weight for age		Anaemia among Children			Anaemia among Adolescent			Anaemia among Pregnant Women		
	-3SD[1]	-2SD[2]	Mild	Moderate[3]	Severe	Mild	Moderate[4]	Severe	Mild	Moderate	Severe
Meghalaya	**11.6**	**34.9**	**57.9**	**34.9**	**6.0**	**51.1**	**37.2**	**9.4**	**100.0**	**60.0**	**28.0**
East Garo Hills	21.7	42.1	—	—	—	—	—	—	—	—	—
Jaintia Hills	7.4	28.0	66.7	27.3	3.0	45.6	43.3	10.0	52.9	29.4	17.6
West Khasi Hills	8.6	36.6	51.6	40.3	8.1	58.1	29.5	8.6	63.6	27.3	9.1
Mizoram	**0.8**	**15.2**	**30.5**	**24.1**	**1.8**	**32.9**	**11.6**	**0.7**	**24.2**	**17.1**	**1.5**
Kolasib	0.0	12.9	42.4	11.8	2.9	33.9	13.0	0.6	39.5	2.6	0.0
Lunglei	0.5	14.5	26.1	32.7	1.6	36.5	8.7	0.0	20.0	20.0	2.9
Saiha	2.2	18.8	28.3	17.5	1.2	24.1	16.1	2.3	17.4	26.1	0.0
Nagaland	**8.2**	**21.4**	**54.7**	**30.5**	**2.1**	**30.3**	**42.3**	**21.0**	—	—	—
Mokokchung	11.6	28.4	53.5	30.2	2.3	28.9	33.2	29.9	—	—	—
Mon	12.0	28.9	61.2	34.3	0.0	34.6	54.5	10.1	66.7	33.3	0.0
Phek	3.2	14.3	33.3	29.2	4.2	24.5	20.8	32.1	0.0	100.0	0.0
Wokha	2.7	6.5	62.4	27.7	2.8	30.4	51.8	16.8	66.7	0.0	33.3
Orissa	**15.2**	**42.8**	**53.7**	**40.9**	**3.1**	**19.6**	**51.4**	**27.2**	**48.5**	**45.3**	**3.8**
Anugul	17.2	45.7	58.9	34.3	5.0	36.4	47.8	15.8	39.3	50.0	7.1
Balangir	16.3	47.8	39.0	55.6	4.1	5.2	55.2	39.0	45.2	48.4	3.2
Baleshwar	10.5	31.5	58.0	40.7	0.4	6.0	64.4	29.2	45.5	54.5	0.0
Bargarh	23.8	59.9	57.1	33.6	3.8	29.2	46.2	18.8	59.0	25.6	7.7
Baudh	14.1	45.9	30.6	66.7	2.4	2.5	50.2	47.3	16.7	80.0	3.3
Bhadrak	20.1	50.0	60.0	35.2	2.7	33.2	43.7	21.3	51.4	35.1	5.4
Cuttack	1.9	13.9	64.3	31.9	1.5	15.9	60.2	19.5	37.5	50.0	0.0
Debagarh	10.7	29.9	31.2	61.9	5.4	2.7	29.5	67.8	44.4	50.0	5.6

Note: [1] This index is expressed in standard deviation units (SD) from the median of the International Reference Population. [2] Includes children who are below –3 SD from the International Reference Population median. [3] Children aged 0-71 months. [4] Adolescent girls 10-19 years including currently married women aged 15-19 years who were not pregnant at the time of survey. — Invalid/Not applicable. * Based on districts surveyed in Phase I of DLHS-RCH (2002-04)

State/ District	Weight for age		Anaemia among Children			Anaemia among Adolescent			Anaemia among Pregnant Women		
	-3SD[1]	-2SD[2]	Mild	Moderate[3]	Severe	Mild	Moderate[4]	Severe	Mild	Moderate	Severe
Dhenkanal	9.2	30.0	39.7	58.5	1.5	2.7	56.6	40.1	25.0	75.0	0.0
Gajapati	14.2	50.7	41.5	53.9	4.6	11.0	58.9	29.7	33.3	64.1	2.6
Ganjam	20.5	54.9	55.0	38.5	3.2	34.4	45.5	18.0	48.1	44.4	0.0
Jagatsinghapur	10.9	27.8	56.1	40.5	1.7	10.9	57.9	30.5	75.0	25.0	0.0
Jajapur	20.3	47.4	44.2	39.7	9.0	26.8	42.1	27.2	41.9	45.2	6.5
Jharsuguda	1.3	9.9	52.9	42.5	2.7	11.3	51.6	35.1	75.0	25.0	0.0
Kalahandi	15.3	40.6	53.8	39.8	3.2	11.2	57.8	29.5	33.3	66.7	0.0
Kandhamal	17.5	48.7	53.1	34.9	10.3	36.1	32.2	23.8	76.0	12.0	4.0
Kendrapara	8.2	35.9	34.5	62.9	2.5	3.3	55.1	41.3	33.3	33.3	33.3
Kendujhar	18.4	50.6	50.4	44.1	3.1	26.6	41.7	30.5	51.4	40.0	2.9
Khordha	15.3	44.9	77.6	18.3	0.2	52.6	36.7	8.9	71.9	24.6	3.5
Koraput	15.6	43.5	45.3	49.4	4.4	12.7	59.5	27.1	34.7	65.3	0.0
Malkangiri	25.6	56.1	44.1	48.4	5.3	22.2	35.8	39.6	41.3	54.3	2.2
Mayurbhanj	17.8	47.7	62.8	29.1	3.6	24.6	45.2	27.8	57.1	28.6	7.1
Nabarangapur	10.7	33.4	47.2	47.2	3.2	5.7	47.5	46.8	54.2	45.8	0.0
Nayagarh	1.4	10.7	70.4	28.2	0.3	18.1	62.6	16.5	23.5	76.5	0.0
Nuapada	17.7	57.0	71.6	24.9	0.3	37.9	45.0	15.6	50.0	42.5	5.0
Puri	8.4	27.7	61.7	35.4	1.9	13.3	70.9	15.6	57.5	42.5	0.0
Rayagada	22.4	50.6	49.2	47.8	2.4	20.5	40.5	38.9	54.2	37.5	8.3
Sambalpur	20.5	52.4	38.8	53.7	4.9	20.4	47.3	31.2	56.5	39.1	4.3
Sonapur	22.8	58.2	48.7	44.9	3.8	24.6	44.6	28.8	52.4	38.1	0.0
Sundargarh	17.1	56.4	55.4	34.6	5.7	28.9	43.1	26.1	55.6	41.7	2.8

Note: [1] This index is expressed in standard deviation units (SD) from the median of the International Reference Population. [2] Includes children who are below –3 SD from the International Reference Population median. [3] Children aged 0-71 months. [4] Adolescent girls 10-19 years including currently married women aged 15-19 years who were not pregnant at the time of survey. * Based on districts surveyed in Phase I of DLHS-RCH (2002-04)

State/ District	Weight for age		Anaemia among Children			Anaemia among Adolescent			Anaemia among Pregnant Women		
	-3SD[1]	-2SD[2]	Mild	Moderate[3]	Severe	Mild	Moderate[4]	Severe	Mild	Moderate	Severe
Punjab	**13.9**	**40.0**	**42.2**	**50.2**	**4.9**	**16.7**	**48.3**	**33.9**	**40.8**	**54.4**	**2.9**
Amritsar	16.8	45.6	34.2	59.8	4.5	20.1	51.5	28.1	38.5	57.7	0.0
Bathinda	17.4	42.9	45.1	52.4	2.1	7.2	52.3	40.4	43.3	51.7	5.0
Faridkot	10.4	35.9	38.8	54.9	5.3	16.0	47.2	36.5	35.3	60.8	3.9
Fatehgarh Sahib	13.6	33.6	44.6	52.1	1.9	13.9	48.1	38.0	48.9	48.9	0.0
Firozpur	16.6	46.1	32.7	48.6	16.3	15.0	38.3	44.1	31.8	59.1	4.5
Gurdaspur	15.2	39.8	43.3	44.9	5.4	16.4	42.9	38.4	50.0	50.0	0.0
Hoshiarpur	9.5	41.3	49.3	48.0	2.2	15.2	54.1	29.7	34.6	61.5	3.8
Jalandhar	9.9	29.8	49.2	47.3	1.6	14.6	51.1	33.9	42.9	52.4	0.0
Kapurthala	11.5	42.8	42.1	50.7	4.5	13.9	61.2	24.6	42.9	42.9	14.3
Ludhiana	13.5	38.4	54.5	37.9	4.1	27.9	53.1	17.9	50.0	40.0	0.0
Mansa	19.0	40.5	32.3	62.5	4.9	3.8	43.7	52.3	34.6	61.5	3.8
Moga	14.0	37.0	36.0	57.0	5.7	9.5	49.7	40.6	53.8	42.3	3.8
Muktsar	24.2	51.4	33.8	61.7	2.6	6.4	42.0	51.1	30.2	68.3	1.6
Nawanshahr	9.3	29.5	55.3	35.0	3.2	29.6	46.0	23.9	65.0	27.5	2.5
Patiala	12.2	38.1	44.1	50.6	3.3	11.9	48.0	40.1	41.7	54.2	4.2
Rupnagar	8.0	37.4	60.7	36.6	1.0	31.8	51.2	14.9	40.0	60.0	0.0
Sangrur	12.4	38.2	40.9	47.9	5.3	22.8	44.9	28.9	26.7	66.7	6.7
Rajasthan	**28.4**	**58.1**	**54.4**	**39.7**	**2.4**	**20.2**	**57.0**	**21.9**	**49.0**	**43.9**	**3.3**
Ajmer	38.6	69.1	56.2	36.2	1.2	33.2	46.0	19.7	61.1	33.3	2.8
Alwar	23.6	57.6	51.7	45.4	2.8	11.6	65.8	22.7	36.7	55.0	8.3
Banswara	15.2	41.7	65.9	31.3	1.5	17.0	65.9	17.0	75.0	14.3	0.0
Baran	34.6	66.9	43.9	49.4	5.0	16.9	45.5	36.9	35.3	52.9	11.8
Barmer	45.0	72.6	60.2	28.8	1.1	22.6	51.9	24.8	47.2	41.7	0.0

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State/ District	Weight for age		Anaemia among Children			Anaemia among Adolescent			Anaemia among Pregnant Women		
	-3SD[1]	-2SD[2]	Mild	Moderate[3]	Severe	Mild	Moderate[4]	Severe	Mild	Moderate	Severe
Bharatpur	22.1	45.4	56.0	34.4	0.6	26.4	46.4	24.1	43.2	44.3	1.1
Bhilwara	28.3	50.2	56.0	35.7	2.3	16.5	51.6	31.0	59.0	33.3	0.0
Bikaner	38.7	70.2	61.3	33.4	1.3	28.3	44.5	26.5	61.0	30.5	0.0
Bundi	35.0	63.9	58.7	23.7	1.5	38.4	42.0	16.2	52.6	26.3	0.0
Chittaurgarh	34.2	65.2	60.2	28.7	0.8	39.0	40.7	16.2	50.0	45.0	0.0
Churu	41.3	66.9	55.1	36.6	2.6	27.4	47.4	24.6	53.3	38.3	3.3
Dausa	24.6	54.2	45.9	50.4	3.3	10.0	66.1	23.9	50.0	48.8	1.3
Dhaulpur	27.8	61.6	41.7	54.4	3.3	8.6	68.1	23.3	40.0	54.3	5.7
Dungarpur	28.6	57.0	46.6	47.5	2.3	14.4	44.3	40.0	37.5	52.5	7.5
Ganganagar	21.1	50.6	68.3	28.8	0.8	26.1	62.5	11.2	73.2	24.4	2.4
Hamumangarh	17.6	50.5	51.0	46.9	1.7	24.9	58.6	15.5	64.5	35.5	0.0
Jaipur	20.7	56.9	56.2	39.9	3.4	18.4	68.4	13.2	42.6	48.9	6.4
Jaisalmer	39.0	69.6	59.1	30.4	4.3	37.7	46.5	15.1	75.0	14.3	7.1
Jalor	21.7	51.8	57.1	39.1	2.0	16.8	59.5	22.4	53.3	38.3	5.0
Jhalawar	32.1	52.6	67.9	21.9	1.8	30.5	50.5	17.3	70.5	20.5	0.0
Jhunjhunun	31.9	58.7	43.6	49.5	4.3	19.1	45.9	33.3	32.7	60.0	7.3
Jodhpur	22.3	52.1	44.1	51.9	3.6	12.5	65.7	21.5	31.1	64.9	2.7
Karauli	28.6	58.7	37.3	59.4	3.2	4.0	65.2	30.6	35.9	57.6	6.5
Kota	22.0	63.1	56.1	40.7	2.4	14.4	61.2	23.7	41.7	58.3	0.0
Nagaur	47.4	68.6	59.6	32.3	2.2	22.5	52.2	23.8	61.9	23.8	4.8
Pali	19.4	48.1	52.4	41.1	5.0	12.6	64.5	22.7	47.0	40.9	9.1
Rajsamand	35.1	66.2	47.8	49.2	2.5	22.1	60.5	16.8	45.7	54.3	0.0
Sawai Madhopur	27.9	66.5	49.1	50.4	0.0	11.8	74.3	13.1	43.4	56.6	0.0
Sikar	18.6	44.3	56.0	37.4	2.0	26.1	45.6	27.4	51.9	44.3	0.0
Sirohi	37.7	68.5	37.0	57.1	4.8	8.9	51.4	39.7	21.2	69.7	9.1

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State/ District	Weight for age		Anaemia among Children			Anaemia among Adolescent			Anaemia among Pregnant Women		
	-3SD[1]	-2SD[2]	Mild	Moderate[3]	Severe	Mild	Moderate[4]	Severe	Mild	Moderate	Severe
Tonk	30.7	62.1	45.6	49.9	3.3	10.3	71.4	18.3	41.7	51.4	5.6
Udaipur	23.2	54.5	65.5	30.6	1.7	18.2	69.4	11.8	45.0	55.0	0.0
Sikkim	**0.8**	**9.7**	**21.0**	**39.4**	**4.6**	**32.1**	**21.2**	**21.4**	**29.6**	**12.1**	**4.0**
North	2.9	23.1	34.1	41.4	3.6	30.8	24.4	23.5	42.5	25.0	2.5
South	0.2	5.8	17.2	38.8	4.8	32.5	20.4	20.9	26.1	8.7	4.3
Tamil Nadu	**16.6**	**38.3**	**60.2**	**30.6**	**3.7**	**28.9**	**50.0**	**17.7**	**64.1**	**28.1**	**1.9**
Ariyalur	10.6	24.4	59.5	31.0	4.2	16.1	65.2	17.7	63.8	29.0	4.3
Chennai	20.6	45.6	57.9	32.2	4.3	22.3	55.3	19.0	60.0	36.0	4.0
Coimbatore	31.2	52.6	49.4	33.3	7.4	25.5	33.3	34.0	72.7	18.2	0.0
Cuddalore	10.0	36.6	49.2	45.5	4.3	14.3	64.6	20.3	60.0	36.7	3.3
Dharmapuri	24.1	48.4	62.2	26.3	1.1	44.8	32.6	14.6	64.1	30.8	0.0
Dindigul	9.0	22.5	62.8	25.1	6.5	46.8	37.2	12.6	61.5	30.8	0.0
Erode	17.3	34.6	57.9	29.4	1.0	31.2	27.4	32.8	29.4	47.1	11.8
Kancheepuram	9.5	33.7	60.8	29.6	4.5	20.8	58.9	17.8	66.7	20.0	2.2
Kanniyakumari	15.3	34.3	70.3	23.1	0.3	40.9	41.3	13.9	70.0	15.0	0.0
Kapur	10.9	39.8	58.8	35.4	4.2	30.3	54.5	13.9	62.5	32.5	2.5
Madurai	14.4	37.0	65.3	29.4	0.7	25.8	56.2	16.3	63.5	28.8	0.0
Nagapattinam	21.2	50.9	55.1	39.3	5.3	14.9	59.3	24.8	66.1	33.9	0.0
Namakkal	9.1	39.2	64.3	32.2	1.3	23.7	64.5	10.4	59.2	38.8	2.0
Perambalur	16.3	37.3	48.8	44.5	4.0	10.7	57.7	28.9	43.5	50.0	2.2
Pudukkottai	19.2	38.8	56.8	29.6	2.8	26.3	34.7	22.0	67.7	16.1	0.0
Ramanathapuram	31.1	51.6	42.1	41.1	7.9	28.9	39.9	27.5	43.8	37.5	6.3
Salem	10.9	40.5	61.8	31.4	4.4	32.3	57.3	9.7	62.7	35.3	2.0
Sivaganga	23.3	42.8	58.5	33.9	2.3	34.3	41.8	21.6	44.0	28.0	8.0

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State/ District	Weight for age		Anaemia among Children			Anaemia among Adolescent			Anaemia among Pregnant Women		
	-3SD[1]	-2SD[2]	Mild	Moderate[3]	Severe	Mild	Moderate[4]	Severe	Mild	Moderate	Severe
Thanjavur	16.7	41.7	60.3	34.7	4.2	21.9	60.3	17.8	63.3	32.7	2.0
The Nilgiris	26.7	43.9	53.0	21.3	3.8	42.7	26.0	16.3	60.0	25.0	0.0
Theni	8.1	32.6	70.5	25.9	0.6	36.8	54.0	8.4	69.2	26.9	0.0
Thiruvallur	5.1	24.1	64.0	30.1	3.1	19.4	66.4	13.9	80.4	13.0	2.2
Thiruvarur	17.4	42.2	61.5	33.7	2.7	23.5	61.7	14.5	55.6	37.0	5.6
Tiruchirappalli	22.1	42.5	67.2	27.5	0.9	26.4	58.0	13.8	65.5	32.8	0.0
Tirunelveli	20.3	46.2	61.5	29.4	2.2	21.4	59.4	16.7	82.6	13.0	0.0
Tiruvanamalai	20.0	41.9	63.8	24.1	7.2	35.7	40.5	20.6	73.3	13.3	0.0
Toothukudi	15.7	34.1	64.0	24.2	1.3	41.7	30.3	17.1	73.3	26.7	0.0
Vellore	19.5	35.1	54.8	32.8	6.2	48.0	39.9	11.4	74.2	12.9	3.2
Viluppuram	7.1	22.9	71.1	22.0	3.6	21.7	59.2	17.7	61.9	34.9	0.0
Virudhunagar	9.5	21.8	56.8	28.2	3.8	51.5	31.2	9.9	43.6	41.0	0.0
Tripura	**5.9**	**30.2**	**30.2**	**42.7**	**1.4**	**21.7**	**36.5**	**19.3**	**33.2**	**28.9**	**0.9**
Dhalai	1.2	12.1	22.0	48.0	4.0	27.0	44.7	6.6	44.4	2.8	5.6
West Tripura	7.1	34.7	32.2	41.4	0.8	20.6	34.8	21.9	31.1	33.8	0.0
Uttaranchal	**25.8**	**52.6**	**41.5**	**36.6**	**2.8**	**23.0**	**38.9**	**28.6**	**44.2**	**38.0**	**3.2**
Almora	7.5	26.4	31.2	12.7	0.0	40.9	22.6	7.4	45.5	18.2	0.0
Bageshwar	32.3	66.2	43.8	51.6	2.1	14.6	47.0	38.0	57.1	31.4	2.9
Chamoli	22.2	70.2	41.8	47.9	4.1	13.3	39.3	46.3	54.3	42.9	2.9
Champawat	34.8	71.2	41.9	45.4	6.7	13.0	38.7	47.7	35.1	45.9	8.1
Dehradun	22.4	45.7	50.0	22.5	2.1	27.5	46.5	18.2	50.0	40.0	0.0
Garhwal	34.7	66.7	50.7	40.7	2.3	19.0	46.7	32.1	46.7	40.0	3.3
Hardwar	28.4	51.6	42.6	41.3	3.1	17.8	51.5	26.2	35.5	54.8	3.2

Note: [1] This index is expressed in standard deviation units (SD) from the median of the International Reference Population. [2] Includes children who are below –3 SD from the International Reference Population median. [3] Children aged 0-71 months. [4] Adolescent girls 10-19 years including currently married women aged 15-19 years who were not pregnant at the time of survey. * Based on districts surveyed in Phase I of DLHS-RCH (2002-04)

State/ District	Weight for age		Anaemia among Children			Anaemia among Adolescent			Anaemia among Pregnant Women		
	-3SD[1]	-2SD[2]	Mild	Moderate[3]	Severe	Mild	Moderate[4]	Severe	Mild	Moderate	Severe
Nainital	10.0	32.2	50.8	23.2	0.6	30.5	45.4	12.3	51.4	28.6	2.9
Pithoragarh	20.3	48.3	38.0	8.3	1.1	28.8	11.9	8.1	18.8	12.5	0.0
Rudraprayag	20.0	35.4	42.5	6.5	0.3	57.9	20.5	1.6	50.0	11.1	0.0
Tehri Garhwal	31.4	64.6	44.4	39.9	6.0	23.0	36.3	38.7	51.4	35.1	5.4
Udham Singh Nagar	40.0	68.0	26.2	68.0	5.2	4.3	32.8	62.8	34.4	56.3	9.4
Uttarkashi	18.9	43.6	50.9	20.8	0.6	43.1	35.6	11.1	83.3	6.7	0.0
Uttar Pradesh	**23.1**	**55.3**	**46.0**	**47.1**	**3.0**	**22.3**	**46.7**	**28.8**	**46.2**	**46.2**	**3.4**
Agra	12.9	33.1	29.1	26.3	3.7	30.8	26.6	20.3	34.3	17.1	0.0
Aligarh	28.6	70.3	49.0	44.6	0.6	13.8	56.0	30.3	45.2	38.7	12.9
Allahabad	15.4	43.2	31.0	66.3	2.3	5.4	48.4	46.2	31.4	65.7	2.9
Ambedaker Nagar	13.5	46.8	42.1	55.9	1.8	11.5	58.2	30.1	43.4	52.6	3.9
Auraiya	32.9	76.9	22.4	68.1	8.6	2.7	33.1	64.2	42.2	44.4	11.1
Azamgarh	22.6	53.7	55.9	40.9	1.2	34.3	46.1	17.5	40.0	60.0	0.0
Baghpat	57.7	86.0	24.7	67.0	7.2	4.8	33.5	61.7	31.1	63.9	4.9
Bahraich	16.8	44.9	63.4	27.6	0.4	48.6	37.3	8.3	54.0	19.0	0.0
Ballia	18.7	50.5	56.4	36.1	2.5	32.4	48.6	18.4	67.9	30.2	0.0
Balrampur	23.0	55.8	48.6	45.4	2.1	19.3	48.8	31.7	56.3	39.4	2.8
Banda	22.0	57.7	23.2	72.5	4.3	1.2	46.4	52.5	18.1	78.3	3.6
Barabanki	16.0	48.2	58.0	39.2	1.4	36.8	43.8	18.2	36.4	63.6	0.0
Bareilly	21.1	48.5	39.7	53.7	3.1	16.1	57.8	25.6	42.9	50.0	7.1
Basti	17.2	56.0	57.0	38.5	1.8	20.5	62.8	16.7	56.6	37.7	3.8
Bijnor	14.6	39.1	40.8	49.9	3.1	11.8	52.7	23.8	47.1	50.0	0.0
Budaun	21.3	50.2	31.5	57.9	9.6	12.1	43.7	43.3	44.1	40.7	15.3
Bulandshahar	71.7	96.0	59.5	25.4	0.9	40.8	40.1	12.1	60.0	30.0	0.0

Note: [1] This index is expressed in standard deviation units (SD) from the median of the International Reference Population. [2] Includes children who are below –3 SD from the International Reference Population median. [3] Children aged 0-71 months. [4] Adolescent girls 10-19 years including currently married women aged 15-19 years who were not pregnant at the time of survey. * Based on districts surveyed in Phase I of DLHS-RCH (2002-04)

State/ District	Weight for age		Anaemia among Children			Anaemia among Adolescent			Anaemia among Pregnant Women		
	-3SD[1]	-2SD[2]	Mild	Moderate[3]	Severe	Mild	Moderate[4]	Severe	Mild	Moderate	Severe
Chandauli	18.1	49.4	27.6	68.6	2.9	4.1	58.2	37.7	33.8	58.8	7.4
Chitrakoot	22.5	61.1	32.5	62.9	1.7	4.4	54.7	39.8	28.9	65.6	2.2
Deoria	17.1	53.1	43.5	54.0	2.0	10.6	59.2	30.3	49.3	46.5	2.8
Etah	19.8	48.9	59.1	37.8	2.2	25.0	53.7	21.3	69.6	26.8	3.6
Etawah	30.4	62.2	31.5	59.1	8.0	7.3	40.2	51.7	36.2	61.7	0.0
Faizabad	21.6	58.4	39.9	57.7	1.9	7.5	59.3	33.2	47.6	50.8	1.6
Farrukhabad	54.8	84.0	19.4	70.5	9.7	3.5	30.5	66.0	29.6	63.4	7.0
Fatehpur	24.1	61.4	56.7	40.9	1.6	37.8	42.6	18.2	55.0	40.0	5.0
Firozabad	19.6	45.7	46.0	44.2	4.9	19.0	47.3	25.8	51.9	38.5	3.8
Gautam Buddha Nagar	10.1	35.2	40.9	48.1	2.3	15.5	51.8	26.1	35.6	53.3	8.9
Ghaziabad	33.6	69.2	55.2	38.2	2.8	28.5	44.8	23.6	35.7	50.0	3.6
Ghazipur	18.1	50.7	48.9	45.3	3.1	28.7	47.5	22.0	35.5	61.3	0.0
Gonda	18.8	50.3	49.6	44.2	1.9	26.3	50.1	22.3	65.7	29.9	1.5
Gorakhpur	18.4	58.4	59.3	37.0	1.7	44.3	39.5	15.1	52.7	40.0	0.0
Hamirpur	22.8	61.1	28.6	68.8	2.1	4.9	54.3	40.7	42.9	54.5	2.6
Hardoi	18.6	46.6	44.1	42.8	2.9	26.7	51.8	17.6	40.5	54.1	0.0
Hathras	46.6	71.2	57.8	32.5	1.9	30.3	47.1	21.3	52.1	39.4	1.4
Jalaun	16.6	52.3	61.9	35.5	1.2	44.1	46.8	8.3	47.2	50.0	0.0
Jaunpur	18.0	51.7	57.5	38.6	2.0	32.2	48.9	17.5	51.2	46.3	0.0
Jhansi	25.3	57.2	56.1	40.1	1.0	43.3	47.2	8.6	50.0	50.0	0.0
Jyotiba Phule Nagar	38.7	68.1	27.3	60.6	8.8	7.1	40.7	51.9	34.3	52.2	10.4
Kannauj	17.7	46.5	53.8	40.7	3.5	19.8	53.5	26.2	56.5	43.5	0.0
Kanpur Dehat	20.7	54.4	53.9	43.0	1.3	26.5	50.4	21.7	38.5	59.6	1.9
Kanpur Nagar	19.5	53.7	63.7	32.2	2.3	43.3	41.9	13.5	46.8	48.9	2.1
Kaushambi	27.6	63.2	21.3	75.9	2.4	3.1	50.1	46.5	27.1	64.3	5.7

Note: [1] This index is expressed in standard deviation units (SD) from the median of the International Reference Population. [2] Includes children who are below –3 SD from the International Reference Population median. [3] Children aged 0-71 months. [4] Adolescent girls 10-19 years including currently married women aged 15-19 years who were not pregnant at the time of survey. * Based on districts surveyed in Phase I of DLHS-RCH (2002-04)

State/ District	Weight for age		Anaemia among Children			Anaemia among Adolescent			Anaemia among Pregnant Women		
	-3SD[1]	-2SD[2]	Mild	Moderate[3]	Severe	Mild	Moderate[4]	Severe	Mild	Moderate	Severe
Kheri	21.9	56.9	58.5	39.6	1.5	27.5	52.5	18.8	58.8	29.4	11.8
Kushinagar	22.3	55.0	27.2	68.2	3.0	5.3	43.2	50.9	26.5	67.6	5.9
Lalitpur	23.4	64.6	59.3	36.8	1.0	50.3	38.0	7.5	64.0	30.0	0.0
Lucknow	20.0	57.6	59.0	34.0	2.2	49.8	33.7	12.7	50.0	46.7	0.0
Maharajganj	20.6	58.9	63.6	31.9	2.2	40.0	44.1	13.2	64.5	30.6	0.0
Mahoba	22.5	61.5	29.3	66.6	2.9	6.0	53.9	39.8	40.4	55.3	2.1
Mainpuri	56.5	88.1	60.2	31.8	1.8	28.5	45.4	24.4	65.9	22.7	2.3
Mathura	40.7	57.6	57.8	29.7	1.6	30.2	45.8	20.4	54.5	31.8	6.1
Mau	14.9	44.8	44.8	51.9	2.2	10.7	64.7	24.4	32.7	65.5	1.8
Meerut	47.8	82.6	32.2	58.8	8.3	4.9	36.8	58.0	44.4	54.3	0.0
Mirzapur	30.9	61.9	59.4	36.9	0.8	27.6	50.1	18.4	73.3	20.0	2.2
Moradabad	25.6	72.7	22.7	65.8	10.9	5.6	34.1	60.3	27.0	65.1	4.8
Muzaffarnagar	40.2	65.6	22.7	67.5	9.2	3.1	26.7	70.1	27.1	67.1	4.3
Pilibhit	25.7	55.1	47.3	46.6	1.3	20.4	44.2	29.8	32.0	48.0	8.0
Pratapgarh	21.6	56.0	56.4	41.0	1.4	38.2	45.5	16.0	68.8	28.1	3.1
Rae Bareli	19.6	55.1	58.7	38.7	1.3	27.4	52.3	18.6	39.1	52.2	8.7
Rampur	19.5	44.3	34.5	58.7	2.9	6.3	46.1	44.1	29.0	64.5	3.2
Saharanpur	18.1	39.0	43.1	50.1	3.8	21.8	53.6	22.9	50.0	45.8	4.2
Sant Kabir Nagar	17.0	53.0	43.0	54.1	2.4	9.7	59.6	30.8	44.3	54.1	0.0
Sant Ravidas Nagar	19.1	54.0	33.1	65.1	1.7	4.3	49.9	45.8	33.8	66.2	0.0
Shahjahanpur	24.7	49.7	36.8	41.8	2.4	16.8	52.6	28.1	40.4	51.1	0.0
Shrawasti	14.6	50.5	65.3	25.7	0.7	49.0	35.7	9.0	60.5	25.0	1.3
Siddharthnagar	18.8	54.3	48.0	50.5	1.4	11.9	63.3	24.8	45.9	54.1	0.0
Sitapur	19.2	53.6	57.4	38.2	2.5	31.8	45.1	21.0	50.0	25.0	16.7
Sonbhadra	22.7	54.4	64.2	33.7	1.2	37.8	48.7	12.6	75.0	18.2	0.0

Note: [1] This index is expressed in standard deviation units (SD) from the median of the International Reference Population. [2] Includes children who are below –3 SD from the International Reference Population median. [3] Children aged 0-71 months. [4] Adolescent girls 10-19 years including currently married women aged 15-19 years who were not pregnant at the time of survey. * Based on districts surveyed in Phase I of DLHS-RCH (2002-04)

Key Indicator, DLHS-RCH, 2002-04

State/ District	Weight for age		Anaemia among Children			Anaemia among Adolescent			Anaemia among Pregnant Women		
	-3SD[1]	-2SD[2]	Mild	Moderate[3]	Severe	Mild	Moderate[4]	Severe	Mild	Moderate	Severe
Sultanpur	19.5	52.7	56.2	41.1	2.1	41.3	44.0	13.2	70.4	18.5	0.0
Unnao	23.5	64.1	23.8	72.3	3.7	2.3	37.9	59.8	17.2	74.1	8.6
Varanasi	12.4	43.5	47.0	49.3	2.5	14.8	60.1	23.8	53.4	46.6	0.0
West Bengal	**13.1**	**44.9**	**64.3**	**30.7**	**2.3**	**25.3**	**55.1**	**18.0**	**60.9**	**32.7**	**3.7**
Bankura	14.7	43.6	50.6	29.2	17.9	20.9	47.9	30.5	52.2	15.2	30.4
Barddhaman	17.9	52.0	73.1	23.4	0.8	39.5	48.1	11.2	66.7	30.0	0.0
Birbhum	9.3	44.1	47.8	50.3	1.0	4.8	60.0	34.8	45.5	54.5	0.0
Dakshin Dinajpur	7.3	32.4	56.2	43.1	0.5	7.3	60.6	32.0	17.6	76.5	5.9
Darjiling	12.2	37.1	70.5	20.1	0.8	50.8	37.8	9.1	72.2	13.9	5.6
Haora	16.1	49.1	74.8	20.3	0.3	39.4	50.5	8.3	68.8	25.0	0.0
Hugli	8.3	36.8	70.2	29.4	0.0	11.0	68.7	20.3	60.0	30.0	0.0
Jalpaiguri	10.3	44.8	47.2	50.5	1.9	6.7	64.0	29.0	44.9	53.1	2.0
Koch Bihar	13.5	48.7	66.4	29.3	0.9	34.6	47.5	15.2	50.0	48.1	1.9
Kolkata	5.3	29.8	77.1	17.1	0.0	55.0	33.3	9.4	75.0	16.7	0.0
Maldah	8.3	38.1	61.9	34.2	1.2	20.3	63.8	14.6	68.4	31.6	0.0
Medinipur	18.3	51.6	74.9	19.0	1.3	33.7	46.5	16.3	69.6	26.1	0.0
Murshidabad	16.1	52.3	59.7	26.8	8.9	31.3	42.8	20.6	56.7	26.7	13.3
Nadia	4.0	29.1	68.5	29.8	0.3	11.8	73.4	14.9	83.3	0.0	16.7
North Twentyfour Parganas	14.6	41.3	77.7	15.0	0.0	48.7	38.8	8.6	85.2	11.1	3.7
Puruliya	11.1	47.2	55.4	43.0	1.0	8.9	63.1	27.8	41.4	55.2	3.4
South Twentyfour Parganas	14.7	51.7	60.0	38.9	1.1	6.8	74.7	18.2	54.5	45.5	0.0
Uttar Dinajpur	11.9	42.6	54.5	44.6	0.4	10.1	63.1	26.1	52.4	47.6	0.0

Note: [1] This index is expressed in standard deviation units (SD) from the median of the International Reference Population. [2] Includes children who are below –3 SD from the International Reference Population median. [3] Children aged 0-71 months. [4] Adolescent girls 10-19 years including currently married women aged 15-19 years who were not pregnant at the time of survey. * Based on districts surveyed in Phase I of DLHS-RCH (2002-04)

State/ District	Weight for age		Anaemia among Children			Anaemia among Adolescent			Anaemia among Pregnant Women		
	-3SD[1]	-2SD[2]	Mild	Moderate[3]	Severe	Mild	Moderate[4]	Severe	Mild	Moderate	Severe
Union Territories											
Andaman & Nicobar Islands	**5.8**	**29.7**	**51.9**	**17.8**	**1.8**	**42.4**	**23.0**	**8.5**	**50.4**	**19.2**	**1.0**
Andamans	6.1	31.0	45.2	5.6	0.5	43.9	20.4	6.7	54.1	13.5	0.0
Nicobars	5.4	28.3	59.3	31.4	3.2	30.9	43.0	22.2	19.4	67.7	9.7
Chandigarh	**10.3**	**35.4**	**32.9**	**61.1**	**3.4**	**16.4**	**55.7**	**26.4**	47.4	47.4	0.0
Dadra & Nagar Haveli	**16.1**	**49.1**	**9.3**	**79.7**	**10.7**	**0.8**	**22.0**	**77.2**	**7.8**	**88.2**	**3.9**
Daman & Diu	**13.2**	**43.8**	**39.4**	**56.9**	**3.5**	**7.1**	**47.5**	**45.3**	**31.3**	**66.7**	**2.1**
Daman	14.3	43.8	41.8	55.7	2.5	8.7	47.3	44.0	30.3	66.7	3.0
Diu	11.3	43.8	34.5	59.3	5.7	6.3	47.7	46.1	33.3	66.7	0.0
Lakshadweep	**13.8**	**42.2**	**70.5**	**23.0**	**1.4**	**65.7**	**22.8**	**6.4**	**78.1**	**12.5**	**0.0**
Pondicherry	**8.2**	**26.8**	**62.5**	**33.1**	**2.3**	**19.2**	**66.4**	**13.8**	**74.5**	**16.9**	**3.6**
Karaikal	8.0	31.7	65.4	30.3	2.2	22.0	63.3	13.9	61.5	29.5	2.6
Mahe	4.6	20.1	84.2	1.0	0.0	75.9	14.5	2.4	80.6	0.0	0.0
Pondicherry	6.9	24.1	60.8	35.6	2.5	14.9	71.0	13.8	77.1	14.6	4.2
Yanam	39.6	64.2	62.0	27.2	1.2	39.5	34.5	23.9	73.7	26.3	0.0

Note: [1] This index is expressed in standard deviation units (SD) from the median of the International Reference Population. [2] Includes children who are below –3 SD from the International Reference Population median. [3] Children aged 0-71 months. [4] Adolescent girls 10-19 years including currently married women aged 15-19 years who were not pregnant at the time of survey. * Based on districts surveyed in Phase I of DLHS-RCH (2002-04)

APPENDIX B

State-wise Number of Districts with Low, Moderate and High Percentage of Underweight Children (-2 SD)

States/Union Territories	Low (<30%)	Moderate (30 –50%)	High (>50%)	Total
Andhra Pradesh	1	19	3	23
Arunachal Pradesh	6	1	-	7
Assam	6	5	1	12
Bihar	-	8	29	37
Chhattisgarh	2	8	6	16
Delhi	3	6	-	9
Goa	1	1	-	2
Gujarat	-	15	10	25
Haryana	6	12	1	19
Himachal Pradesh	4	7	1	12
Jammu and Kashmir	5	2	-	7
Jharkhand	-	6	12	18
Karnataka	2	17	8	27
Kerala	3	10	1	14
Madhya Pradesh	1	13	31	45
Maharashtra	-	14	21	35
Manipur	4	1	-	5
Meghalaya	1	2	-	3
Mizoram	3	-	-	3
Nagaland	4	-	-	4
Orissa	7	13	10	30
Punjab	2	14	1	17
Rajasthan	-	4	28	32
Sikkim	2	-	-	2
Tamil Nadu	5	22	3	30
Tripura	1	1	-	2
Uttaranchal	1	5	7	13
Uttar Pradesh	-	18	52	70
West Bengal	2	12	4	18
Union Territories				
Andaman & Nicobar Islands	1	1	-	2
Chandigarh	-	1	-	1
Dadra & Nagar Haveli	-	1	-	1
Daman & Diu	-	2	-	2
Lakshadweep	-	1	-	1
Pondicherry	2	1	1	4
All India	**75**	**243**	**230**	**548**

APPENDIX C

State-wise Number of Districts with Low, Moderate and High Percentage of Severely Underweight Children (-3SD)

States/Union Territories	Low (<10%)	Moderate (10 –20%)	High (> 20%)	Total
Andhra Pradesh	2	16	5	23
Arunachal Pradesh	7	-	-	7
Assam	4	5	3	12
Bihar	-	8	29	37
Chhattisgarh	2	8	6	16
Delhi	5	4	-	9
Goa	2	-	-	2
Gujarat	1	18	6	25
Haryana	5	13	1	19
Himachal Pradesh	4	7	1	12
Jammu and Kashmir	6	1	-	7
Jharkhand	-	8	10	18
Karnataka	8	13	6	27
Kerala	10	4	-	14
Madhya Pradesh	3	11	31	45
Maharashtra	6	19	10	35
Manipur	4	1	-	5
Meghalaya	2	-	1	3
Mizoram	3	-	-	3
Nagaland	2	2	-	4
Orissa	6	16	8	30
Punjab	4	12	1	17
Rajasthan	-	4	28	32
Sikkim	2	-	-	2
Tamil Nadu	8	13	9	30
Tripura	2	-	-	2
Uttaranchal	2	2	9	13
Uttar Pradesh	-	33	37	70
West Bengal	6	12	-	18
Union Territories				
Andaman & Nicobar Islands	2	-	-	2
Chandigarh	-	1	-	1
Dadra & Nagar Haveli	-	1	-	1
Daman & Diu	-	2	-	2
Lakshadweep	-	1	-	1
Pondicherry	3	-	1	4
All India	**111**	**235**	**202**	**548**

APPENDIX D

State-wise Number of Districts with Low, Moderate and High Percentage of Children with Moderate or Severe Anaemia

States	Low (< 35%)	Moderate (35 – 50%)	High (> 50%)	Total
Andhra Pradesh	4	17	2	23
Arunachal Pradesh	5	2	-	7
Assam	3	4	5	12
Bihar	7	11	19	37
Chhattisgarh	-	5	11	16
Delhi	-	4	5	9
Goa	2	-	-	2
Gujarat	4	4	17	25
Haryana	-	4	15	19
Himachal Pradesh	1	7	4	12
Jammu and Kashmir	6	1	-	7
Jharkhand	4	9	5	18
Karnataka	14	7	6	27
Kerala	14	-	-	14
Madhya Pradesh	7	8	26	41
Maharashtra	1	12	22	35
Manipur	5	-	-	5
Meghalaya	1	1	-	2
Mizoram	3	-	-	3
Nagaland	4	-	-	4
Orissa	5	14	11	30
Punjab	-	4	13	17
Rajasthan	11	11	10	32
Sikkim	-	2	-	2
Tamil Nadu	17	13	-	30
Tripura	-	1	1	2
Uttaranchal	6	3	4	13
Uttar Pradesh	10	29	31	70
West Bengal	9	7	2	18
Union Territories				
Andaman & Nicobar Islands	2	-	-	2
Chandigarh	-	-	1	1
Dadra & Nagar Haveli	-	-	1	1
Daman & Diu	-	-	2	2
Lakshadweep	1	-	-	1
Pondicherry	3	1	-	4
All India	**149**	**181**	**213**	**543**

APPENDIX E

State-wise Number of Districts with Low, Moderate and High Percentage of Adolescent Girls with Moderate or Severe Anaemia

States	Low (<50%)	Moderate (50- 75%)	High (>75%)	Total
Andhra Pradesh	1	13	9	23
Arunachal Pradesh	1	6	-	7
Assam	1	3	8	12
Bihar	-	14	23	37
Chhattisgarh	-	3	13	16
Delhi	-	3	6	9
Goa	1	1	-	2
Gujarat	1	7	17	25
Haryana	-	2	17	19
Himachal Pradesh	1	5	6	12
Jammu and Kashmir	4	3	-	7
Jharkhand	-	7	11	18
Karnataka	8	13	6	27
Kerala	10	4	-	14
Madhya Pradesh	1	12	27	40
Maharashtra	-	4	31	35
Manipur	5	-	-	5
Meghalaya	1	1	-	2
Mizoram	3	-	-	3
Nagaland	-	4	-	4
Orissa	1	11	18	30
Punjab	-	4	13	17
Rajasthan	-	11	21	32
Sikkim	2	-	-	2
Tamil Nadu	5	15	10	30
Tripura	-	2	-	2
Uttaranchal	4	2	7	13
Uttar Pradesh	5	29	36	70
West Bengal	3	5	10	18
Union Territories				
Andaman & Nicobar Islands	1	1	-	2
Chandigarh	-	-	1	1
Dadra & Nagar Haveli	-	-	1	1
Daman & Diu	-	-	2	2
Lakshadweep	1	-	-	1
Pondicherry	1	1	2	4
All India	**61**	**186**	**295**	**542**

APPENDIX-F

Anaemia among Children by State/ Union Territories based on NFHS-2 (1998-99) Classification*

Percentage of children (age 0-71 months) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, India, 2002-04

State and Union territories	Parentage of children with any anaemia	Percentage of children with			Number of children
		Mild anaemia	Moderate anaemia	Severe anaemia	
Andhra Pradesh	97.0	10.1	62.5	24.4	13,431
Bihar	97.8	6.5	64.7	26.6	21,447
Chhatisgarh	96.5	4.8	66.6	25.1	5,224
Delhi	97.0	6.2	69.8	21.0	2,812
Goa	93.3	16.4	66.0	10.9	284
Gujarat	98.2	4.7	55.8	37.6	11,100
Haryana	96.8	5.5	66.0	25.3	4,960
Himachal Pradesh	97.5	6.5	73.9	17.1	1,191
Jharkhand	97.5	7.9	70.7	18.9	7,323
Karnataka	97.7	11.6	63.8	22.3	9,932
Kerala	87.6	34.1	50.6	2.9	5,680
Madhya Pradesh	96.3	5.8	67.0	23.5	11,431
Maharashtra	98.4	4.6	62.9	30.9	18,093
Orissa	97.9	7.9	64.2	25.8	6,563
Punjab	97.6	5.5	67.3	24.8	4,445
Rajasthan	96.3	7.9	68.3	20.1	15,252
Tamil Nadu	95.1	11.1	64.7	19.3	10,147
Uttar Pradesh	96.5	7.0	67.2	22.3	44,293
Uttaranchal	80.8	9.0	55.5	16.3	2,007
West Bengal	97.5	10.2	71.9	15.4	16,120
Other states[1]					
Jammu & Kashmir	56.6	21.5	31.3	3.9	981
Arunachal Pradesh	55.1	11.1	30.7	13.4	129
Assam	93.8	7.7	67.3	18.9	2,489
Manipur	42.6	5.7	25.3	11.6	222
Meghalaya	98.9	17.9	57.9	23.2	135
Mizoram	55.8	8.7	39.3	7.8	68
Nagaland	90.2	12.7	65.5	12.0	84
Sikkim	71.5	6.0	42.9	22.6	40
Tripura	74.2	5.5	50.1	18.6	359
Union territories					
Andaman & Nicobar Islands*	75.5	14.6	50.3	10.6	126
Chandigarh*	97.3	6.0	61.7	29.5	176
Daman & Diu*	99.7	2.3	67.6	29.8	25
Dadra & Nagar Haveli*	99.6	0.0	43.1	56.5	54
Lakshadweep*	95.0	27.3	56.8	10.8	14
Pondicherry*	94.6	17.0	62.6	15.0	179
India	96.3	8.2	65.1	23.0	2,16,820

*Note: Haemoglobin level between 10.0 - 10.9 g/dl is mild anaemia, 7.0 – 9.9 g/dl is moderate anaemia and below 7.0 g/dl is severe anaemia. [1] Includes children who are below – 3 SD from the International Reference median. @ Literate mothers with no years of schooling are also included. Total includes 348, 15, and 15 cases with missing information on sex of child, religion and in standard of living index were not shown separately. # Total of the group do not add to total cases in the last row due to do not know and missing cases. [1] Data collected for half of the districts only.

APPENDIX-G

Anaemia among Children by Background Characteristics based on NFHS-2 (1998-99) Classification*

Percentage of children (age 0-71 months) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, India, 2002-04

Background characteristic	Parentage of children with any anaemia	Percentage of children with			Number of children
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age of child (in months)					
0-5	96.0	6.0	63.6	26.4	12,587
6-11	97.8	4.6	63.3	29.9	16,003
12-23	97.6	5.0	59.2	33.4	32,831
24-47	96.7	8.0	64.2	24.5	74,705
48-71	95.2	10.9	68.8	15.5	80,694
Birth order					
1	95.9	9.4	64.8	21.7	58,019
2-3	96.3	8.4	65.0	23.0	89,231
4-5	96.8	6.7	65.3	24.8	34,524
6+	97.1	6.9	64.8	25.4	17,677
Mother's not interviewed	95.8	8.2	66.3	21.3	17,369
Sex of the child					
Male	96.2	8.4	65.0	22.9	1,12,617
Female	96.4	8.1	65.1	23.2	1,03,855
Weight for age of children					
Normal	95.6	9.4	65.9	20.2	1,12,114
Below 2 SD[1]	97.1	7.0	64.1	26.0	1,04,706
Below 3 SD	97.2	6.2	61.0	30.0	41,524
Residence					
Rural	96.4	7.8	65.0	23.6	1,58,737
Urban	96.1	9.5	65.1	21.5	58,083
Mother's education					
Non-literate	96.8	6.7	64.7	25.5	1,04,257
0-9@years	96.2	9.2	65.1	21.9	60,279
10 years & above	94.9	11.7	64.9	18.3	30,867
Mother's not interviewed	96.2	8.4	67.0	20.8	21,418
Religion					
Hindu	96.6	8.0	65.2	23.5	1,76,341
Muslim	95.2	9.4	65.0	20.8	30,618
Christian	90.3	14.4	59.0	16.9	3,949
Sikh	97.4	5.2	66.9	25.3	3,370
Buddhist	97.5	5.4	63.3	28.8	1,746
Jain	94.6	10.6	69.6	14.4	483
Other	90.1	7.5	67.1	15.5	299
Caste/tribe#					
Scheduled caste	97.3	7.0	65.3	25.0	45,554
Scheduled tribe	96.9	5.6	62.2	29.1	21,794
Other backward class	96.3	8.7	64.9	22.8	90,570
Other	95.4	9.4	66.2	19.7	56,587
Standard of living index					
Low	96.9	6.8	65.0	25.1	1,13,277
Medium	96.0	9.1	64.7	22.1	65,487
High	95.3	11.0	65.9	18.4	38,042
Total	96.3	8.2	65.1	23.0	2,16,820

*Note: Haemoglobin level between 10.0 - 10.9 g/dl is mild anaemia, 7.0 – 9.9 g/dl is moderate anaemia and below 7.0 g/dl is severe anaemia. [1] Includes children who are below – 3 SD from the International Reference median. @ Literate mothers with no years of schooling are also included. Total includes 348, 15, and 15 cases with missing information on sex of child, religion and in standard of living index were not shown separately. # Total of the group do not add to total cases in the last row due to do not know and missing cases.

APPENDIX-H

Assessment of Anaemia Among Pregnant Women by State/ Union Territories Based on NFHS-2 (1998-99) Classification*

Percentage of pregnant women (age 15-44 years) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, India, 2002-04

State and Union territories	Parentage of pregnant women with any anaemia	Percentage of pregnant women with			Number of pregnant women
		Mild anaemia	Moderate anaemia	Severe anaemia	
Andhra Pradesh	96.9	8.6	67.9	20.4	1,817
Bihar	97.0	7.7	67.2	22.1	1,735
Chhatisgarh	96.4	3.8	62.6	30.0	473
Delhi	95.9	6.3	74.6	14.9	294
Goa	93.2	15.9	65.9	11.4	31
Gujarat	99.1	5.0	58.0	36.0	1,207
Haryana	96.1	5.2	66.8	24.1	484
Himachal Pradesh	97.4	11.5	69.8	16.1	136
Jharkhand	97.7	7.8	72.3	17.7	626
Karnataka	94.6	12.6	64.8	17.2	1,162
Kerala	88.6	28.0	59.9	0.7	756
Madhya Pradesh	97.4	5.1	68.4	23.9	1,002
Maharashtra	98.6	4.6	62.7	31.3	2,012
Orissa	97.2	8.4	62.3	26.6	665
Punjab	98.8	4.8	70.8	23.1	504
Rajasthan	96.3	6.2	64.6	25.5	1,263
Tamil Nadu	94.8	12.0	66.8	16.0	1,401
Uttar Pradesh	96.4	6.9	67.4	22.1	3,381
Uttaranchal	87.0	9.8	59.4	17.8	180
West Bengal	97.7	11.5	66.2	20.0	1,821
Other states[1]					
Jammu & Kashmir	70.6	25.5	38.2	6.9	81
Arunachal Pradesh	32.6	7.1	20.7	4.9	9
Assam	93.0	10.5	59.3	23.3	217
Manipur	28.5	8.1	15.1	5.2	19
Meghalaya	100.0	18.0	62.0	20.0	11
Mizoram	42.7	8.3	28.1	6.3	5
Nagaland	100.0	40.0	40.0	20.0	4
Sikkim	58.7	12.7	36.5	9.5	3
Tripura	60.9	8.2	34.5	18.2	43
Union territories					
Andaman & Nicobar Islands*	80.9	19.1	33.8	27.9	8
Chandigarh*	94.7	-	68.4	26.3	21
Daman & Diu*	100.0	2.1	72.9	25.0	3
Dadra & Nagar Haveli*	100.0	-	41.2	58.8	5
Lakshadweep*	90.6	21.9	68.8	-	1
Pondicherry*	92.6	12.5	69.3	10.8	24
India	96.2	8.5	65.4	22.3	21,405

Note: * Haemoglobin level between 10.0 - 10.9 g/dl is mild anaemia, 7.0 – 9.9 g/dl is moderate anaemia and below 7.0 g/dl is severe anaemia. @ Literate women with no years of schooling are also included. # Total of the group do not add to total cases in the last row due to do not know and missing cases.

APPENDIX-I

Assessment of Anaemia Among Pregnant Women by Background Characteristics Based on NFHS-2 (1998-99) Classification*

Percentage of pregnant women (age 15-44 years) classified as having iron-deficiency anaemia by degree of anaemia by selected background characteristics, India, 2002-04

Background characteristic	Parentage of pregnant women with any anaemia	Percentage of pregnant women with			Number of pregnant women
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age (in years)					
15-19	96.6	8.7	65.6	22.3	5,041
20-24	96.3	8.5	66.0	21.7	9,133
25-29	96.2	8.9	64.4	22.9	4,724
30-34	95.3	8.1	64.0	23.1	1,777
35-39	96.3	7.1	66.0	23.2	570
40-44	96.9	4.0	68.5	24.4	161
Residence					
Rural	96.5	8.4	64.7	23.4	15,577
Urban	95.5	8.9	67.3	19.3	5,828
Education					
Non-literate	96.9	6.5	64.1	26.3	9,623
0-9@years	96.0	9.5	65.4	21.1	7,736
10 years & above	95.3	11.6	68.7	15.0	4,043
Religion					
Hindu	96.5	8.1	65.7	22.7	17,266
Muslim	95.2	10.1	65.1	20.0	3,051
Christian	91.2	18.6	58.8	13.9	453
Sikh	98.5	4.1	68.8	25.5	372
Buddhist	99.2	8.6	61.2	29.3	202
Other	88.2	14.5	53.1	20.6	61
Caste/tribe#					
Scheduled caste	97.1	7.7	64.8	24.5	4,679
Scheduled tribe	96.4	5.4	61.5	29.5	2,180
Other backward class	96.1	8.6	66.3	21.2	8,706
Other	95.8	10.4	66.1	19.4	5,604
Standard of living index					
Low	96.8	7.3	63.9	25.7	10,246
Medium	95.8	9.4	66.1	20.2	7,206
High	95.7	10.3	68.2	17.2	3,953
Total	96.2	8.5	65.4	22.3	21,405

Note:*Haemoglobin level between 10.0 - 10.9 g/dl is mild anaemia, 7.0 – 9.9 g/dl is moderate anaemia and below 7.0 g/dl is severe anaemia. @ Literate women with no years of schooling are also included. # Total of the group do not add to total cases in the last row due to do not know and missing cases.

APPENDIX-J

Number of Districts Covered in Phase – I and Phase - II for Assessment of Nutritional Status under District Level Household Survey, Round - II, 2002-2004

S.No.	S T A T E	Districts surveyed in		Total
		Phase -1	Phase -2	
1	Jammu & Kashmir	7 (DN)	7	14
2	Himachal Pradesh	6	6	12
3	Punjab	8	9	17
4	Chandigarh*	0	1	1
5	Uttaranchal	7	6	13
6	Haryana	10	9	19
7	Delhi	5	4	9
8	Rajasthan	16	16	32
9	Uttar Pradesh	34	36	70
10	Bihar	18	19	37
11	Sikkim	2	2 (M)	4
12	Arunachal Pradesh	7	6 (M)	13
13	Nagaland	4	4 (M)	8
14	Manipur	5	4 (M)	9
15	Mizoram	3	5 (M)	8
16	Tripura	2**	2 (M)	4
17	Meghalaya	3	4 (M)	7
18	Assam	12	11 (M)	23
19	West Bengal	9	9	18
20	Jharkhand	9	9	18
21	Orissa	15	15	30
22	Chhatisgarh	8	8	16
23	Madhya Pradesh	23	22	45
24	Gujarat	12	13	25
25	Daman & Diu*	1	1	2
26	Dadra & Nagar Haveli*	0	1	1
27	Maharashtra	18	17	35
28	Andhra Pradesh	12	11	23
29	Karnataka	14	13	27
30	Goa	1	1	2
31	Lakshadweep*	1	0	1
32	Kerala	7	7	14
33	Tamil Nadu	14	16	30
34	Pondicherry*	2	2	4
35	Andaman & Nicobar Islands*	1	1	2
	Total	**296**	**297**	**593**

Note*Union Territory. M : Data collected by MODE (Data structure are different excluded in report).
DN : Data not collected (excluded in report).
** Only rural data available for Dhalai district.

APPENDIX K
DISTRICT LEVEL HOUSEHOLD SURVEY REPRODUCTIVE AND CHILD HEALTH (RCH) ROUND II, PHASE II, 2004

HEALTH QUESTIONNAIRE

Anemia Measurement Background & Consent (Read separately to each individual)

Anemia is a serious problem affecting adolescent girls and pregnant women and their ability to work, learn and makes them weak. It is due to decreased iron in their blood. A person found to be anemic can be given iron and folic acid tablets to be cured of the disease.

We would like to test you (and other girls aged 10-19 years and pregnant women in your household). Please allow me to take a drop of blood from you. We are using a special method that uses disposable sterile instruments that are clean and completely safe and the blood will be analysed in the District Hospital. The result of this test will be kept confidential and will not be shown to others.

May I request you to give your consent to have this test done? You have a right to say no for giving permission to do this test, and I will respect that decision.

After explaining the above, I have found that the respondent agreed to give a drop of blood.

INSTRUCTIONS:

N103: Line Number of respondents - from Household Questionnaire.
N104: Age of the respondents in completed years - from Household Questionnaire.
N105: Line number of Mother
(Confirm the name of mother by asking and copy the line number from Q100A of women questionnaire).
N106: Line Number of children (if mother interviewed) - Use Birth History (Q114) from Woman Questionnaire.
N108: Age in months (only for child) - Use Birth History (Q117) from Woman Questionnaire.
Codes: N109 & N112 : 1: Taken, 2: Parent refused, 3: Her/his self refused, 4: Not present, 5: Others.
N111: 1: Eligible Woman currently pregnant (15-44), 2 – Adolescent (10-19), also includes EW (15-19) not pregnant.
(Please confirm the marital status of girls aged 10-19 from Household questionnaire)
N113: Should be copied from page number 2 after getting the result from Laboratory.

FORM – I

Sr. No. given by Health Investigator ☐☐

Measurement of Nutritional Status & Anemia

State	District	Tahsil/Block	Rural/Urban	PSU No.	Serial No. of HH
☐☐	☐☐	☐☐☐	☐	☐☐	☐☐☐☐

N101 Sr. No.	**N102** Name of Child/ Adolescent/ Pregnant women	**N103** Line number in HH Questionnaire	**N104** Age (in completed years)	**N105** Mother Line No From EW Qes.	N106 Line number of child in birth history	N107 Sex of Child	N108 Age (in months only for child)	N109 Result status of weight	N110 Weight (in kilograms) *[For children below 72 months]*	N111 Pregnant /Adolescent	N112 Result status of blood sample	N113 Hemoglobin level
01		☐☐	☐☐	☐☐	☐☐	☐	☐☐	☐	☐☐.☐	☐	☐	☐☐.☐
02		☐☐	☐☐	☐☐	☐☐	☐	☐☐	☐	☐☐.☐	☐	☐	☐☐.☐
03		☐☐	☐☐	☐☐	☐☐	☐	☐☐	☐	☐☐.☐	☐	☐	☐☐.☐
04		☐☐	☐☐	☐☐	☐☐	☐	☐☐	☐	☐☐.☐	☐	☐	☐☐.☐
05		☐☐	☐☐	☐☐	☐☐	☐	☐☐	☐	☐☐.☐	☐	☐	☐☐.☐
06		☐☐	☐☐	☐☐	☐☐	☐	☐☐	☐	☐☐.☐	☐	☐	☐☐.☐
07		☐☐	☐☐	☐☐	☐☐	☐	☐☐	☐	☐☐.☐	☐	☐	☐☐.☐
08		☐☐	☐☐	☐☐	☐☐	☐	☐☐	☐	☐☐.☐	☐	☐	☐☐.☐
09		☐☐	☐☐	☐☐	☐☐	☐	☐☐	☐	☐☐.☐	☐	☐	☐☐.☐
10		☐☐	☐☐	☐☐	☐☐	☐	☐☐	☐	☐☐.☐	☐	☐	☐☐.☐
11		☐☐	☐☐	☐☐	☐☐	☐	☐☐	☐	☐☐.☐	☐	☐	☐☐.☐
12		☐☐	☐☐	☐☐	☐☐	☐	☐☐	☐	☐☐.☐	☐	☐	☐☐.☐

Signature of the H.I: _____ **Date:** ☐☐/☐☐/☐☐☐☐ **No. of extra sheets** ☐

Identification code of H.I: ☐☐☐

Date of the testing (to be filled after getting the sheet from Lab)**:** ☐☐/☐☐/☐☐☐☐

FORM-II (*To be filled in duplicate*)

DISTRICT LEVEL HOUSEHOLD SURVEY
REPRODUCTIVE AND CHILD HEALTH (RCH),
ROUND – II, PHASE II, 2004

Measurement of Nutritional Status

To be filled in by the ***Health Investigator/Measurer***

State:..... ☐☐ Tahsil/Block:..... ☐☐☐

District: ..... ☐☐ PSU:..... ☐☐

1 Sr. No	2 HH Serial Number (given by Health Investigator)	3 Name of the Child/ Adolescent/ Pregnant Woman	4 Serial No.in Health Investigator Questionnaire	5 Hemoglobin Level in Blood
01				.
02				.
03				.
04				.
05				.
06				.
07				.
08				.
09				.
10				.
11				.
12				.
13				.
14				.
15				.
16				.
17				.
18				.
19				.
20				.

Health Investigator

Signature: _____

Name : _____

Identification code of H.I: ☐☐☐

No. of extra sheets: ☐

Measurer at Laboratory

Signature: _____

Name : _____

Date : ☐☐/☐☐/☐☐☐☐

APPENDIX- L

ACRONYMS

AIDS	:	Acquired Immuno Deficiency Syndrome
ANM	:	Auxiliary Nurse Midwife
AWW	:	Aganwadi Worker
ARI	:	Acute Respiratory Infections
CHC	:	Community Health Centre
CMW	:	Currently Married Women
DLHS	:	District Level Household Survey
EW	:	Eligible Women
FP	:	Family Planning
FRU	:	First Referral Unit
GoI	:	Government of India
HIV	:	Human Immuno deficiency Virus
ICPD	:	International Conference on Population Development
IEC	:	Information, Education & Communication
IIPS	:	International Institute for Population Sciences
LHV	:	Lady Health Visitor
MCH	:	Maternal Mortality Rate
MoHFW	:	Ministry of Health and Family Welfare
NSSO	:	National Sample Survey Organization
NGO	:	Non-Government Organisation
NIN	:	National Institute of Nutrition
NIHFW	:	National Institute of Health and Family Welfare
OBC	:	Other Backward Classes
PHC	:	Primary Health Centre
PRC	:	Population Research Centre
PSU	:	Primary Sampling Unit
RA	:	Regional Agency
RCH	:	Reproductive and Child Health
RTI	:	Reproductive Tract Infection
SC	:	Scheduled Caste
ST	:	Scheduled Tribe

STI	:	Sexually Transmitted Infection
TBA	:	Trained Birth Attendant
UFS	:	Urban Frame for Survey
UNICEF	:	United Nation for Children's Fund
UIP	:	Universal Immunisation Programme
UT	:	Union Territory
WHO	:	World Health Organization

Appendix M

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